Hints on the Rearing and Management of Trees.

VAST sums of money are annually spent in this country on trees; it would be impossible to make a close estimate of the amount, but we can not be very far out of the way in putting it at a million of dollars. We believe we could show by figures that this is not, as it may appear to many, an immoderate estimate; for more than one quarter of that amount may be set down to Rochester alone. This gives us some idea of the extent and importance of our arboricultural interest, yet it attracts little attention. The men engaged in rearing and planting trees are not those who make much noise in the world. We have no arboricultural societies to collect information or incite to experiments and observation — no public gardens or arboretums to test theories and modes of culture — the whole matter thus far has been left to individual effort and enterprize; and as both growers and purchasers of trees usually proceed upon the principles of economy, no great improvement has been made upon old methods; — at least, this business has certainly not advanced in the same ratio as some other branches of the useful arts and sciences. How many of those engaged in the planting and culture of trees, have taken pains to acquire the slightest possible degree of knowledge concerning their structure, the functions of the different parts, and their relative connection and influence upon each other? Not one in five hundred. A man spending a hundred dollars for trees does not consider it worth his while to consult the best books that have been written on the subject — he does not consider that a dollar spent in that way might save him fifty in the management of his plantation. A few words of oral instruction from some one perhaps as ill-informed as himself, or a few hints which he finds on the cover of a nurseryman's catalogue, supply all the needed information. We are happy to admit exceptions — numerous too. Books and papers are read and studied; but the few who read and seek information from such sources are, when compared with the number of persons who plant trees, but a drop in the bucket. Frauds of all kinds are perpetrated upon people thus exposed by ignorance; for there is no pursuit under the sun exempt from dishonest and tricky persons. It is not surprising that we hear, every year, people complain bitterly of their trees. Some they lose totally the first season; others linger along for years without making any considerable growth, while the cause remains a complete mystery. "They were nice trees, well planted, and every way well cared for." Now there are many reasons for these failures; and if people were as well informed as they should be on this subject — if they possessed a correct knowledge of the essential properties of a tree fit for safe and successful removal, and understood properly what good planting and good treatment consist in — they could readily account for their losses.

We propose, now, to offer a few suggestions on these topics — first, in regard to the qualities of trees, and how these are to be secured; and secondly, on planting and subsequent treatment. We may as well say at the outset, that we are not about to

offer either a new theory or practice, but simply to point out certain principles and details of culture and management, well understood and universally approved by experienced practical tree-growers.

In the first place, a very large number of the trees sent out from the nurseries are not fit to be planted. We must not be understood now as alluding to any nurseries in particular. The fact of our being a nurseryman will not prevent us from expressing our convictions freely; and when we charge malpractice on the trade, we are prepared to shoulder our share of the blame. We intend our remarks to be applied in a general way, however; and we believe all candid nurserymen will admit the truth of what we are about to say.

It will be generally admitted that *hardiness* is one of the most important qualities of a tree, to fit it for safe removal. How is this to be attained? It is very well known that nearly all purchasers of trees prefer such as are *tall* and *straight*, with a smooth glossy bark, indicating what is called "thriftiness." *Height* is the greatest requisite — in fact, the *sine qua non* — with by far the greater number of purchasers. Now, nurserymen must consult the tastes of their customers, and they are compelled to adopt a system of culture that will produce such trees as they find most saleable. They must either do this or abandon the trade. To produce these tall, smooth-barked trees, they must manure their ground highly, and plant closely. In these dense nursery plantations the light is pretty effectually excluded from all parts of the tree save the top; and as, according to an unalterable law of nature, trees and plants grow toward the light, the tops push upward, and few or no side branches are formed. Those who have not seen this exemplified in the nursery, may have seen it in the forest. If a number of Elms or Maples, for instance, are planted closely in a group, and others separately, on the same sort of soil, we find that those planted close together shoot upward rapidly, forming tall, smooth, naked trunks, with a few branches only at the top; while those standing apart in the open space grow in height slowly, but throw out numerous side branches, the trunk is thick, the bark furrowed, and the trees are so different from the others as to have scarcely a characteristic in common, save the foliage. These tall trees, with few branches, grown in the shade and shelter, have few roots. In a natural state the roots always bear a due proportion to the branches. We find that a tree standing in an open field, and having a wide-spread head, will have roots extending three or four times the distance that those of much more lofty trees do, growing in a thick grove or forest. It is on this account that trees left standing when the forests are cut down, seldom survive the shock of the first gale; they are broken or torn up by the roots. Nature beautifully adapts everything to its situation and circumstances. The tree in the depth of the forest is sheltered on all sides, and requires but few roots to resist the force of the wind, or branches to protect its trunk. The tree in the open field, exposed on all sides, requires an ample supply of both. It grows moderately; its trunk is stout; its wood is firm, compact, and hardy; its bark thick; its roots numerous, wide-spread, and powerful; its branches ample, evenly disposed, and nicely balanced. There it stands, fitted out completely to meet the requirements of its position.

There is valuable instruction here for us all. Nurserymen know that when their rows of trees are thinned out — say one-half or three-fourths removed — the remainder, instead of pushing upward, as they had done before, begin to throw out numerous branches, the trunk thickens, and the roots spread and strengthen rapidly. One season's growth, under such conditions, gives them such a hold of the ground that it requires three or four times the amount of labor to remove them that it did the year previous, when they stood very close. On this account such trees, although generally regarded as culls, prove most successful when transplanted, and are preferred by experienced planters, even if they be defective in form.

Trees rapidly grown, forced with a rich soil, and drawn up in the shade and shelter of close nursery rows, are as ill-fitted to stand the shock of removal into the open ground, exposed to the full force of the sun and wind, heat and cold, as are the tall and slender trees that have grown up in the heart of the forest. The young trees have the advantage in being more plastic: they suffer, and almost die; but the inherent vigor of youth enables them, in many cases, to weather the storm. But even where they do survive the shock, it is severely felt, and shows itself in the slow and feeble growth which follows removal.

In gardens and sheltered grounds this difficulty is of less account; but how small a number of all the trees planted enjoy the benefits of shelter! Scarcely any one dreams of nursing and hardening their trees for a period previous to their final planting; and yet, in a multitude of cases, it would be a prudent and profitable course — and so especially with all the more rare, valuable, and delicate trees, shrubs, and plants. Even in England, where the climate is much less rigorous and changeable than ours, such proceedings are recommended and practiced. In a work which we noticed some time ago,* it is recommended, in planting valuable and delicate evergreen trees, to plant them first in some sort of open boxes that would allow of their removal, once or twice a year, from a more sheltered to a more exposed place, until they would finally become sufficiently hardened to bear the exposure of their permanent situation.

It is quite unnecessary to multiply illustrations showing the advantages which young trees derive from being reared in open situations, sufficiently exposed to admit of the growth of side branches, and acquire what we call *hardiness*. Our nursery rows are in general too close, and the trees too close in the rows; we grow three or four times too many on the ground. We are aware that it would add considerably to the cost of the trees, to give them so much more space; but would it not be a saving for purchasers to pay one-third or one-fourth more for them? We very much fear that we shall have no very extensive reform on this head until people become much better informed on the subject of arboriculture — when, instead of looking for the tallest trees in the nursery, they will look for stout, well-rooted trees, that have been well exposed to the sun and air, and thus hardened and fitted to encounter the trials of a removal.

One reason why so few good pyramidal-shaped young trees are to be found in the

* *Practical Hints on Planting Ornamental Trees*, by Standish & Noble, page 479, vol. iii.

nurseries, is their closeness. Although they are cut back, no stout side branches are produced, because of the want of a full share of light around the lower part of the trees; any shoots that do start out are soon smothered, and the entire growth is thrown into two or three shoots at the top. A good pyramidal tree can not be produced — we can not secure the first branches — without a clear space of two or three feet on each side; whereas, they usually stand within a few inches in the nursery rows.

Another advantage in giving trees abundant space, to which we have already alluded, is, that it promotes the extension of roots. In fact, whatever favors the extension of branches, also favors the roots; because they depend so much upon each other as to be co-extensive. But the soil has a powerful influence on the roots. In stiff, clayey soils, trees have bare, forked roots, and few fibres; and that, too, even when the growth of the tree is good. Such trees do not transplant well. Dry, friable soils, are more favorable to the growth of numerous fibrous roots, and trees taken from them transplant more successfully. Culture has a great influence on the roots, too. If the ground be kept continually clean and friable by cultivation around the roots, they become much more fibrous and better for transplanting than if the surface of the ground be permitted to harden into a crust, or to be covered with weeds or grass.

Having the trees thus properly grown in abundant space, dry friable soils, and clean culture, the next important point is to take them up properly; because, no matter how a tree is grown, if it be badly taken up it is not fit for successful transplanting. Trees are more universally injured — *ruined* — in this operation than in any other. We believe it is so in all parts of the world, for our trees imported from Europe are about as badly bruised and mangled as any we ever see at home. At the seasons of transplanting, nurserymen are generally hurried, and have to employ raw, untrained laborers, who know or care as much about roots as they do about conic sections. A man may stand over them, and show them, and talk to them until he is hoarse, and yet the roots will be cut and mangled. It really requires considerable skill and experience, and a great deal of *care*, to dig trees well. Some have long tap-roots that penetrate the ground deeply, while others spread widely near the surface of the ground. These different characters require different modes of proceeding. Some insist that it does a tree no harm to cut off some of its roots; but we hold that the roots should be taken out of the ground without the slightest bruise or mutilation, if possible. The necessity for curtailing the tops would thus be obviated, and there would be some hope for the trees. We are utterly opposed to the lopping off both roots and branches of trees, and thus converting them into bare poles before planting. The generally commended proceeding of pruning or shortening the tops, is a necessity only because the roots scarcely ever escape injury in some way or other; and as leaves must receive a supply of nutriment through the roots, it is only reasonable that when the roots are reduced the leaves should also be reduced in a corresponding degree.

Then comes packing for transportation. The less the roots of trees are exposed to the air, between the time they are taken from the ground and the time they are planted, the better. This should never be forgotten. If roots be of any value, it can only be when they are sound and fresh. More than nine-tenths of all the trees planted

have to be carried a greater or less distance from the nursery, and consequently require packing; and many people, to save a little cost, will run the risk of having their trees ruined. We are satisfied that vast quantities of trees are lost from bad packing and exposure in transportation. It requires considerable skill and care to pack well. Very few of the European nurserymen can pack for America, as importers well know: and on this account we are always compelled to purchase at higher prices than we might do, in order to secure good packing; for if we were to get trees for nothing, they would be a hard bargain unless well packed. Good packing is equally essential in transporting trees from one part of our own country to the other, because we have great delays. We can get a package almost as soon from Liverpool to New York as we can from New York to Rochester; so that parcels of trees should be always fitted up to go safely twice the distance intended, or twice the time that ought to carry them to their destination. What signifies fifty cents or a dollar per hundred, in the cost of securing trees for carriage, compared with running the risk of losing them or having them so damaged that they will not recover for years. Every man who orders trees should say emphatically, "Pack my trees in the best manner;" and nurserymen should be held responsible for this, as much, at least, as for the quality of the trees.

Having now briefly called attention to what we consider a prevailing defect in the growth of young trees, that unfits them for safe and successful removal, and the necessity of care in packing for transportation, we shall hereafter take occasion to say something on planting and subsequent management.

THE BEURRE GIFFARD PEAR.*

This and the *Doyenne d'Ete*, figured in the November number of our last volume, are both of comparatively recent introduction from France, and prove to be two of the most beautiful and excellent of all our summer Pears. We have fruited the *Beurre Giffard*† several years, and have found it uniformly fine, both in appearance and quality. It was before the Pomological Convention at Philadelphia, in 1852, and discussed as follows:

"Mr. Saul, of New York. I move that the *Beurre Giffard* be put on the list of Pears that promise well. This year I have had very good specimens. I consider it one of great excellence. It is an abundant bearer, and will be a great addition to our early Pears.

"Mr. Norton, of New York. I have seen a specimen in Western New York, and I believe it is a good Pear.

"Hon. M. P. Wilder. The chair will state that it is a New Pear from France. I have fruited it for two years. It is of good size, and acute-pyriform in shape; and my impression is, that if picked before ripe, it will be a valuable Pear. It is rather a poor grower, as far as my experience goes, on the Quince.

"Mr. Baxtee, of Pennsylvania. I have found it an excellent Pear; and for an early Pear, there is no better, as regards its beauty and growth.

* See Frontispiece. † Pronounced *Giffar*, accenting the last syllable like *far*.

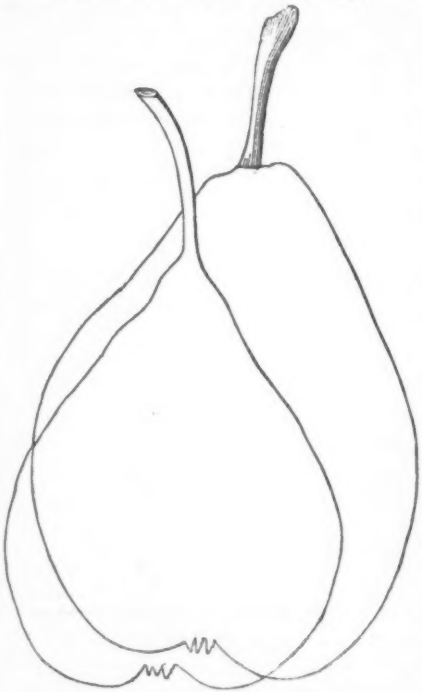
"Dr. Eshleman, of Pennsylvania. I have found it a most excellent Pear. It has fruited in our county, and has proved with us decidedly the best early Pear we have.

"Mr. Cabot, of Massachusetts. I have fruited it two years on the Quince, and I coincide entirely with the preceding remarks.

"The vote being taken, it was decided unanimously that the *Beurre Giffard* be placed on the list of Pears that promise well."

Thus we find it succeeding well at widely distant localities in New York, Massachusetts, and Pennsylvania; and we have been informed, by priave letters, of its success in various other States. Hon. James Mathews, of Coshocton, Ohio, considers it one of the best summer Pears he has yet tested. It is not unsafe, therefore, to recommend it to every one making up a collection of choice Pears.

Fruit — medium size, occasionally large; we have measured some specimens, grown on Quince stock, that were three inches long and two and three-eights wide; acute-pyriform. Stalk — usually about an inch long, sometimes one and a half inches, pretty stout, and inserted without any depression, except in rare cases. Calyx—closed, segments long and stiff, in a narrow basin. Skin — greenish yellow in the shade, sprinkled with carmine dots; sunny side red, varying from light to dark, and mottled with dark spots and stripes. Flesh — white, tender, and juicy, with a sprightly, vinous flavor, and somewhat of a spicy perfume. It is greatly improved, as all summer Pears are, by being gathered before ripe. The best we have had were ten days in the house before eaten — from the 1st to the 10th of August.



BEURRE GIFFARD.
Two outlines, showing the variation in size and form.

The tree is remarkably distinct in its growth, wood, and foliage, — readily distinguished from all others. The young shoots are long and slender; the bark is reddish-brown; the leaves small, with very long and slender leaf-stalks, and large stipules. It succeeds well, both on Pear and Quince stocks, but must be classed among the moderate growers; a *Beurre Diel*, a *Duchesse d'Angouleme*, or a *Vicar of Winkfield*, of the same age, on the same soil, would be nearly twice as large: yet it is not a bad grower, and it bears young and abundantly.

REPTON'S LANDSCAPE GARDENING AND ARCHITECTURE.

One of the latest labors of the lamented Loudon, was to collect and edit, in one volume, the works of Repton. This was one of the first of five volumes which he intended to be a complete Encyclopedia of Landscape Gardening; another was to embrace Italian, French, and Dutch schools, which represent the Geometric style; another was to treat of the "Modern, or Landscape style," as introduced by Kent, and illustrated in the writings of Shenstone, Whateley, and Mason; another the Picturesque school, as represented in the writings of Gilpin and Price; and the fifth the "Gardenesque," which was Loudon's own style, or so named by him. Loudon regarded Repton's school "as combining all that was excellent in former schools, and in fact as consisting of the union of an artistical knowledge of the subject with good taste and good sense." Repton labored in the same direction as did Downing, to unite and harmonize country houses with the surrounding scenery. His works are filled with instruction, and should be carefully studied by all who wish to acquire information or cultivate their taste on these subjects. We copy the following chapter, with its illustrations, giving some account of English cottage residences three hundred years ago. Some of the most elegant cottages erected in this country, within the past ten or twelve years, are in this old English style, though variously modified, according to tastes and circumstances, and to adapt it to the present state of society.

"On Dates of Buildings.—A cottage, or keeper's house, was deemed necessary at Apsley Wood, about three miles from Woburn Abbey. The Duke of Bedford (to whom I am indebted for numerous opportunities of displaying his good taste) one day observed,

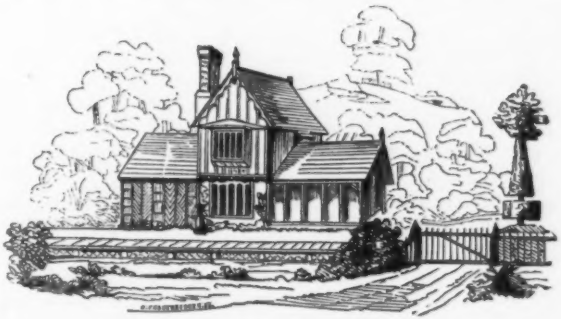


Fig. 1. ENGLISH COTTAGE BUILT OF TIMBER.

Prevalent from the reign of Henry VI to Henry VIII, and erected by the Duke of Bedford, at Apsley Wood, near Woburn Abbey, in 1810 and 1811.

that out of the numerous cottages called Gothic, which everywhere presented themselves near the high roads, he had never seen one which did not betray its modern character and recent date. At the same time, his Grace expressed a desire to have a cottage of the style and date of buildings prior to the reign of Henry VIII., of which only some imperfect frag-

ments now remain. Adjoining this building, an attempt has been made to assimilate a garden to the same character, and the annexed plates (figs. 1 and 2) will furnish an example of both.

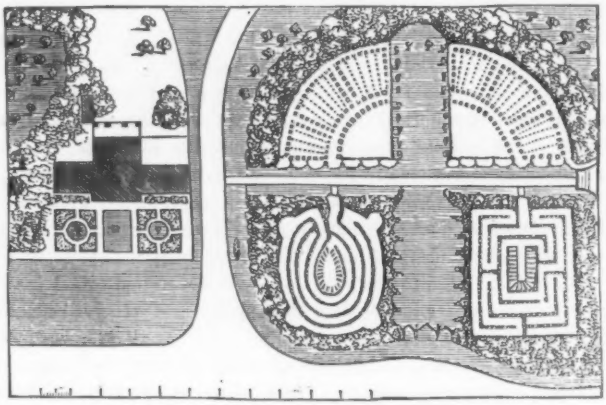


Fig. 2. GENERAL PLAN OF THE GARDEN,

appended to the timber cottage of the fifteenth century, erected at Apsley Wood, on the roadside from Newport Pagnel to Woburn.

"A communication of some curious specimens of timber houses was made to the Society of Antiquaries, in 1810, which was ordered to be engraved and printed for the Archæologia. But this building does more than any drawing to exemplify many of the parts which have been thus rescued from the effects of time.

"To admirers of genuine Gothic forms, the following note may prove acceptable, as showing the authorities for all the details of this cottage (fig. 1).*

"The hints for this garden (fig. 2) have been suggested by various paintings and engravings of the date of King Henry VIII and Elizabeth; and even the selection of flowers has been taken from those represented in the nosegays of old portraits of the same period, pre-

"* *Note by J. A. R.* This cottage serves as a specimen of the timber houses which prevailed in England from about the year 1450 to 1550; that is, from the reign of Henry VI to that of Henry VIII. As few buildings of this date remain entire, and every year reduces their number, the general plan of this cottage is not copied from any individual specimen, but the parts are taken from the most perfect fragments of the kind, some of which have since been destroyed. The hint of the lower story, being of stone, is taken from a building near Eltham Palace, except that the windows are here executed in oak instead of stone. In some buildings, both of brick and of stone, it is not uncommon to see oak windows used, as at Wolterton Manor House, East Barsham, Norfolk, and at Carhow Priory near Norwich. Stone and brick corbels, supporting beams, may be found at Lynn Regis and at Ely. The brick-noggin between the timbers is copied from a timber house in Lynn Regis, built by Walter Conys, in the reign of Henry VI or Edward IV. The hint of the upright timbers being ornamented with small arches (over the center building), was taken from a timber house near Kelvedon, Essex, which has since been destroyed. The gable-board is copied from a house at St. Edmondsbury, and is not uncommon. The form of the pinnacles (of which few specimens now remain, being the parts most exposed to the weather,) is taken from some in brick, or stone: the only one I have ever found carved in oak is at Shrewsbury. The square flag is copied from one at Hornchurch, Essex. The projecting bow is taken from a window in Norwich, but the tracery of it is not uncommon; a specimen in oak is still to be found at Knowle, in Kent. The tracery of the lower window is taken from a timber house in Coventry; but this, also, is not uncommon. The windows are all taken from an earlier date than the end of the reign of Henry VIII; that is, before they were divided by cross-bars, which did not prevail in wood till the reign of Edward VI, Elizabeth, and the early part of the seventeenth century. The design of the porch is a hint from various specimens

served in the picture gallery of Woburn.* This attention to strict congruity may appear trifling to such as have never considered, that good taste delights in the harmony of the minutest parts of the whole; and this cottage, however small, compared with modern mansions, is a tolerably fair specimen of the style and size of private houses three hundred years ago; for, although the castles and collegiate buildings were large, some of the dwelling-houses of respectable persons did not much exceed this cottage in dimensions or comfort, when one living-room was often deemed sufficient for all the family.

"The change in customs, during three or four centuries, makes it very difficult to build such dwelling-houses as shall contain all the conveniences which modern life requires and at the same time preserve the ancient forms we admire as picturesque: yet, the prevailing taste for the Gothic style must often be complied with; and, after all, there is not more absurdity in making a house look like a castle, or convent, than like the portico of a Grecian temple, applied to a square mass, which Mr. PRICE has not unaptly compared to a clamp of bricks: and so great is the difference of opinion betwixt the admirers of Grecian and those of Gothic architecture, that an artist must adopt either, according to the wishes of the individual by whom he is consulted; happy if he can avoid the mixture of both in the same building; since there are few who possess sufficient taste to distinguish what is perfectly correct, and what is spurious in the two different styles; while those who have most power to indulge their taste, have generally had least leisure to study such minutiæ. To this may, perhaps, be attributed the decline of good taste in a country with the increase of its wealth from commercial speculation.

"By the recent works of professed antiquaries, a spirit of inquiry has been excited respecting the dates of every specimen that remains of ancient beauty or grandeur; and the strictest attention to their dates may be highly proper, in repairs or additions to old houses; but, in erecting new buildings, it may reasonably be doubted whether modern comfort ought to be greatly sacrificed to external correctness in detail; and whether a style may not be tolerated which gives the most commodious *interior*, and only adopts the general outline and the picturesque effect of old Gothic buildings.

"Among the works professedly written on architecture, there is none more effective and useful than that by Sir WILLIAM CHAMBERS; and it were much to be wished that a similar work on the Gothic style could be referred to; but it has been deemed necessary for artists to study the remains of Greece and Rome in those countries, whence they generally bring back the greatest contempt for the style they call Gothic. The late much-lamented JAMES WYATT was the only architect with whom I was acquainted who had studied on the Continent, yet preferred the Gothic forms to the Grecian. As the reason for this preference, he told me, about twenty years ago, that he conceived the climate of England required the weather moldings, or labels, over doors and windows of the Gothic character, rather than the bolder projections of the Grecian cornices, which he often found it necessary to make more flat than the models from which they were taken, lest the materials should not bear

of open porches, and particularly the cloisters of old alms-houses, or short galleries leading to dwelling-houses, as at Clapton, near Lea Bridge (since destroyed), &c. The design for the door of the cottage is taken from one remaining at Sudbury, in Suffolk. The chimneys are copied from those at Wolterton Manor House, at Barsham, Norfolk, published in the fourth volume of the Vetusta Monumenta. The ornaments painted on the posts and rails are taken from the picture of King Henry VIII and family, now in the possession of the Society of Antiquaries.

* The plan of this garden, as given in FORBES' *Hortus Woburnensis*, plate XV, differs from that here given, though not materially. Mr. FORBES has given an extract from the *Red Book* of Woburn Abbey, by which it appears that Mr. REPTON recommended the following flowers, as still to be found in very old gardens, viz., 'Rosemary, Columbine, Double-Crowfoot, Clove-Pink, Marigold, Double-Daisy, Monkshood, Southernwood, Pansies, White Rose, Yellow Lilies, Turk's-cap,' &c.—*Hort. Wob.*, p. 296. J. C. L.

the change of weather to which they were exposed in this country: and this accounts for the occasional want of boldness imputed to him in his Grecian designs. In his Gothic buildings, to unite modern comfort with antiquated forms, he introduced a style which is neither Grecian nor Gothic, but which is now become so prevalent that it may be considered as a distinct species, and must be called *Modern Gothic*. The details are often correctly Gothic, but the outline is Grecian, being just the reverse of the houses in the reign of Queen Elizabeth and King James, in which the details are often Grecian, while the general outline is Gothic. In the buildings of that date, we observe towers rising boldly above the roof, and long *bower* windows breaking boldly from the surface; but in Modern Gothic all is flat, and the small octagon turrets, which mark the corners, are neither large enough to contain a screw staircase, nor small enough for chimnies; yet this style has its admirers, and therefore I have inserted a specimen, although I conceive it to be in bad taste, and have placed it betwixt the Grecian and Gothic, not knowing to which it more properly belongs. If a door, or window, or even a battlement, or turret, of the true Gothic form, be partially discovered, mixed with foliage, it stamps on the scene the character of picturesqueness, of which the accompanying vignette (fig. 3) may serve as an example; and thus the smallest fragment of genuine Gothic often reconciles to the painter its admission into the landscape; even although the great mass of the building may offend the eye of the antiquary, or man of correct taste, by its occasional departure from the true Gothic style."

Fig. 3. GOTHIC WINDOW — EXTERIOR.

PRUNING AND MANAGEMENT OF THE PEACH TREE.*

SECTION IV. — THEORETICAL EXPLANATION OF THE VARIOUS OPERATIONS OF PRUNING.

59. The tree being planted as before directed, the next care is to regulate it every year by pruning, so as to cause it to produce shoots proper for training, according to the intended form. But before entering into the details of the operations that a tree requires, from the time of being planted to that of its death, it is highly necessary to explain the general principles, the application of which frequently occurs, and which, once explained, will not require to be repeated when I detail the successive manual operations. We shall commence by describing the instruments that are used.

I. *Necessary Implements and Tools.*

60. The tools or implements necessary for pruning fruit-trees are the *secateur*, the pruning-knife, and the saw.

*Continued from January number.

I need not describe these instruments, which are sufficiently known; I will only comment on the *secateur*. This instrument is now used by nearly all the growers at Montreuil. It can be used more expeditiously than the knife, and is perfectly fitted for all amputations necessary for small branches. Still, when some of the stronger branches require to be cut back closely to their origin on the main branch, the pruning knife is employed in order to make the amputation as near as possible to that branch, and also to make a very clean cut. Again, the pruning-knife is made use of for heading back young trees when planted, and for pruning the ends of the wood-branches. In fact, when the branch is too strong, the pressure which the *secateur* occasions in cutting it across often produces gum or canker, which may cause the loss of the branch. This objection to the *secateur* exists even in the case of small branches, above all, when badly adjusted; but when this instrument is well made, nothing injurious results from its use, only the wound is slower in healing. The first trials of the *secateur* at Montreuil were not favorable to it, because the instruments we then had were far from being perfect. Their use, in fact, was on the point of being abandoned, when M. Lemaignan, locksmith at Montreuil, applied himself to make some of great superiority; and it is to this circumstance that the almost universal use of the *secateur* in our country is due. Messrs. Arnheiter and Bernard, working locksmiths at Paris, also make very good ones.*

61. When a large branch is to be cut off, a hand-saw with a narrow and very long blade is made use of. But as the teeth of the saw tear the bark and wood, the cut must be immediately smoothed with the pruning-knife, and then immediately covered with grafting-wax, or with grafting-clay. These precautions are essential for the preservation of the tree. Whatever instrument be used for pruning, it must be very sharp, so that the cut may be smooth and clean. The cut should be a little oblique, the knife being inserted at the side of the shoot or branch opposite the bud, and slanting through, so that the point of the slant may be one-twelfth to one-sixth of an inch above the point of the bud, according to the strength of the branch and the season of pruning. The greatest length should be given in winter.

II. *Of Pruning, properly so called.*

62. The name of winter-pruning is given to the principal pruning, because it is generally performed at that season. As for us cultivators, who have a large number of trees to manage, we have no fixed time of pruning. I have occasionally pruned some of my trees in December, with the same result as those that were pruned later. It may therefore be concluded that it can be done from January till April: but I recommend it to be done soon rather than too late; for when vegetation is active, pruning causes a more sensible reaction on the trees. There are, however, cases where late pruning may be of use. When a tree not yet growing is pruned, it loses no sap; for on the latter beginning to circulate, it flows to the buds, which, by expanding, afford it an outlet; at the same time the cuts are so far dried up as to offer a sufficient resistance to the escape of the sap. If, on

* Arnheiter, place de l'Abbaye, 9; Bernard, rue Saint-Jacques, 218.

the contrary, we prune when the sap is actively circulating in the tops of the shoots, their pores, opened by the cuts, allow a portion of it to evaporate. Whence the conclusion, that it is proper to prune old trees when the sap is down, because they have none to spare; and that, on the contrary, it may prove beneficial to prune young or very vigorous trees after the sap has risen. The loss of a part of this fluid can not be disadvantageous to them; for, by moderating their vigor, it insures the production of fruit. We must not forget that fructification weakens the trees. One of the objects of pruning is to diminish the superabundant strength of a tree; and when once it has put it in a state for fruit-bearing, pruning maintains a due balance between the production of wood, and that of fruit, so as to economise the strength of the tree, and insure its prolonged existence. Since I have been a cultivator, I have had numerous opportunities of convincing myself, by experience, of the correctness of this observation.

63. To render the operations of pruning more intelligible, I shall consider it in two points of view: 1st, the pruning ot wood-branches; 2d, the pruning of fruit-branches.

64. 1st, *Pruning of the Wood-branches.* Its principle is a consequence of their natural organization. I have explained (19—26) what is a shoot, and what is a branch. The first, which ultimately becomes the second, is furnished throughout its length with wood-buds, or with shoots of large or small size; and is always, itself, terminated with a bud which is designated by the name of terminal *bud*, or *eye*, or *growing-point*. The sap, which tends to rise in all trees with great force, but more especially in the Peach, gives a greater development to the terminal bud than to the others, which become gradually weaker in proportion to their distance from the top of the shoot, and as they come nearer to their origin at the place of the last pruning. The result of this constant natural tendency is, that we can direct the sap to whatever lateral bud we please on that shoot, by cutting the latter at a very short distance above, to make a new terminal bud, or eye, which takes the name of *œil terminal combiné*, to distinguish it from the natural terminal eye, and because the effects of pruning are combined in its development. It is a bud, or eye, rendered terminal by pruning.

65. Thus the shortening of branches has not the effect of stopping their growth, but that of giving a great vigor to the eye above which the cut is made; and to the lower buds a strength which varies according to their distance from the bud to which the shoot was cut back. This bud, in growing, forms a shoot which constitutes a new prolongation, terminated by a growing-point; and is furnished, in turn, with lateral wood-buds.

We now perfectly understand that, as we can make any lateral bud a terminal one, by pruning above and near it, we can choose it according to our requirements and the end we have in view.

66. This is the fundamental principle of pruning the wood-branches. They should be pruned long or short, according to the strength of the tree. In those that are vigorous it is not uncommon to see branches make shoots of from four and a half to six and a half feet long in one season, and sometimes even of greater length. In such cases it is well not to prune them short, because, by leaving them at considerable

length, there is space for several shoots likely to be produced of medium strength for furnishing the branch. This is a better mode of subduing the impetuous growth of young trees, than that of delaying the pruning till such time as the wood and flower-buds commence to open, and thus cause a loss of sap as mentioned (62). Moreover, I have only spoken of late pruning in order to meet a case where, from some cause, the operation could not be performed at its proper time; and it should be understood that, under these circumstances, it is the youngest and strongest trees that suffer the least from such delay.

67. If, on the other hand, short pruning is adopted, it will produce strong young shoots, often too near each other, the vigor of which can neither be repressed by pinching, nor by any other operation. There would be no resource left but to cut them out at the following pruning. This increases the number of wounds, weakens the tree, and prevents it from assuming a regular form, with branches tapering uniformly from their bases to their extremities.

68. Therefore, short pruning must not be adopted, except on the wood-branches of feeble trees. It is advisable in this case, because it would be improper to give them a greater length of wood than they can nourish; and because it is desirable that branches should have a thickness in proportion to their length. In cases like these, short pruning concentrates the sap, and the branch thus pruned becomes thicker. When ultimately such a tree takes a more active growth, the shoots, when pruned, must accordingly be left at greater length.

69. The Peach tree, trained in the square form, is first set off with two main branches (*branches mères*); and, in order that its form may be complete, each of these must be furnished, on its under side, with three *secondary branches*, which are called *lower;* and on its upper side with three *secondary branches*, called *upper*.

70. In gentlemen's gardens, where the walls are higher than ours, four lower and four upper secondary branches may be established on each of the main branches; but as they are formed in the same way as the other three, I shall confine myself to describing the operation according to the method I pursue with my own wall-trees.

71. The operation that forms the lower secondary branches, which should always be permitted to grow before the upper ones, is based upon the above-mentioned principle (64); that pruning to a wood-bud favors its development, and that of the eyes that are beneath it, in proportion to their proximity. Therefore, the wood-bud, which is immediately below the terminal one, is that which takes the next greatest growth. This being the case, when we want to form a lower secondary branch, we prune the leading shoot of the main branch (A, fig. 7) to an eye on the upper side or in front of the shoot, the next lower bud being on the under side. The first is intended to prolong the main branch, the second to form a lower secondary.

72. For the formation of a lower secondary branch, we can also make use of a shoot or of a summer lateral, if they spring from immediately below the bud to which the main branch has been pruned. The shoot or summer lateral is either left entire, or pruned back to the first wood-bud; and it is trained in the direction which it ought to take. It is sometimes useful to facilitate its development by one or more longi-

tudinal incisions on the main branch immediately above it, and extending to the base of the shoot.

73. In pruning the lower secondary branches, it is best to cut to an eye situated on the under side of the branch. In cutting to an eye on the under side, the shoot from it has a natural tendency to take the direction we desire. The same holds good in pruning the main branches, after the formation of the three lower secondary branches; but previously it would not, owing to the alternate position of the buds. For the prolongation of the main branches, we should generally cut to an eye so situated as that the one immediately below it may be on the under side for the development of a lower secondary branch. The eye to which a main branch ought to be shortened must not, however, be chosen in all cases in this manner. Under some circumstances it may be preferably shortened to a bud placed on any side, provided it be at the proper height, and the position of the shoot is afterwards regulated by nailing. When a branch is stronger than its fellow, its pruning must be so managed as to check it; while the weakly branch must be pruned in such a manner as to promote its growth: and thus equality will be ultimately restored. With this aim, I cut back the stronger to a triple wood-bud (13), and destroy the middle one, which is always the strongest, with the point of the pruning-knife. As soon as the remaining two are grown up, I preserve the one that appears the best fitted for the object in view, and the other is cut off. Lastly, when there is a strongly-marked inequality, the weaker branch may be cut back to a vigorous shoot which may be made the leader; and in training, this must be allowed to grow as freely as is consistent with the regularity of the tree.

74. With regard to the upper secondary branches, they are formed, when it is time to do so, from a fruit-branch suitably placed, of the thickness of a quill throughout its length, of moderate vigor, and which has been several times pruned back. To accomplish this, the successional bearing-shoot is cut out close to its base, and the branch that has borne fruit the year before is pruned to a wood-eye for a leading shoot. The formation of upper secondary branches must be watched progressively, in order that their base may be always well furnished with branches that shall not be over-vigorous for fruiting. This requires much care, and pinching and disbudding must be resorted to, in order to check the tendency of the sap to rise most abundantly through vertical channels. They are also pruned to a triple bud for a leader; and frequently, when they still prove too vigorous, they are cut back to a well-placed lateral, the latter being shortened to a suitable wood-bud.

75. From what has been said, it is now evident that there is no great difficulty in pruning wood-branches; and any one can insure success when the operations necessary to be performed on them, from the time the tree is planted till that of its complete formation, shall have been detailed.

76. 2d, *Pruning the Fruit-branches.* In a Peach tree, trained according to the square mode, if we except the two main branches and the twelve secondary branches that compose the skeleton, all the others may be considered as shoots and fruit-branches of a mixed nature; for the greater number of them bear both leaves and fruit.

77. The way of obtaining the greatest possible quantity of fruit from a tree, without

exhausting it, consists, then, in the art of keeping the whole extent of all the leading branches well furnished with shoots capable of producing fruit, a property which they lose when more than one year old. We must therefore know how to procure a succession of these by suppressing those branches that have borne fruit, and which, after that, are merely wood-branches. This is done by properly pruning the fruit-shoots, and by promoting the growth of others to succeed those that have borne fruit.

78. On the fruit-branches there are eyes which may be single, double, triple, quadruple, or even more numerous (9—14). Hence there are four sorts of fruit-branches. The first, which has single eyes, usually a flower-bud, is long and slender, and is terminated by a pushing-eye or growing-point. It is shown in fig. 1. The terminal pushing-bud is seen at *a;* all the buds, *b*, are single and flower-buds. Sometimes it has also at its base another wood-bud, *a;* and when this is the case, the shoot is considered well constituted. These wood buds are found more especially on the under side, and at the base of wood-branches, particularly in aspects not much exposed to the sun.

79. The second (fig. 2) has double eyes, *c:* the one, *a*, a wood-bud; the other a flower-bud.

80. The third (fig. 3) has triple eyes, *d;* two of them flower-buds, and a wood-bud, *a*, between them.

81. The fourth, the length of which varies from an inch and a quarter to about three inches, forms a little spur, which in growing displays a small cluster or boquet, composed of four flower-buds, and sometimes more (fig. 4, 5, *g*), in the midst of which is a pushing-eye, *a*. This kind is a fruit-branch properly so-called, for it produces with greater certainty the finest fruits. It is only found on well-established trees, and generally on the old wood. It appears to be the result of a wood-bud being prevented by the scarcity of sap from becoming a shoot. A deficiency in the flow of sap converts nearly all the wood-buds into flower-buds. (See fig. 5.) We call it *cochonnet* at Montreuil, and in other localities it receives the names of *branche à bouquet* and of *bouquet de mai*.

82. It must be understood that well-constituted fruit-branches have always wood-buds close to their bases. It is these eyes that afford the means of forming replacing or successional branches, the importance of which will be explained in pointing out the proceedings by which their development is induced.

83. The fruit-branches almost invariably push as many shoots as they have eyes. Whence it follows, that, with this natural disposition, a tree would very soon have nothing but fruit-branches, the terminal of which would be the only wood-bud. Shoots having no wood-buds on their lower parts, and which, consequently, can not be properly shortened, would elongate more or less; but all below each year's terminal shoot would become entirely naked branches, ultimately bearing only at their extremities a small wood-shoot. Besides the disagreeable appearance which a Peach tree in that state would present, its produce would be small, and its life would be shortened. We must, therefore, prevent such bad consequences by judicious pruning.

84. This consists in operating so as to cause the sap to flow with greater force into

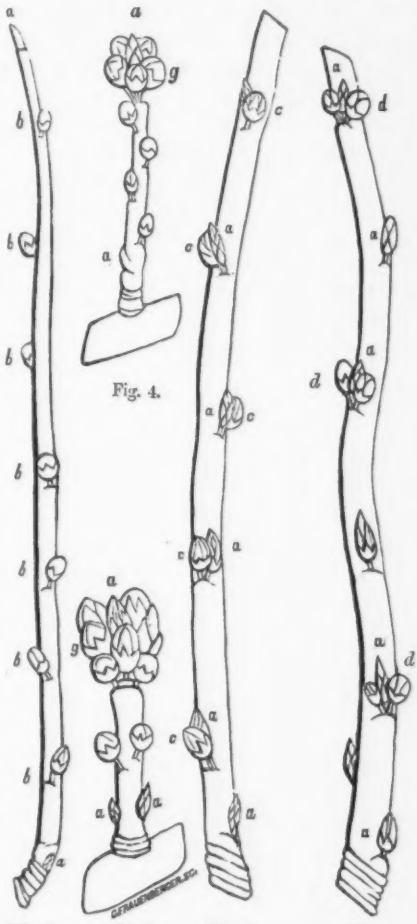
the lower part of each fruit-branch, in order that the eyes there situated, and more especially the lowest one, may not die off in consequence of the sap being drawn up to the top of the branch. Such might be the case if the shoot were left entire; and it might likewise occur even if pruned, if we did not watch the growth of the terminal and of all the wood-buds situated above the one nearest to its base, so that the development of the latter, which is most important, may not be arrested. The whole art, then, in pruning the fruit-bearing shoots, consists in encouraging the eyes at their bases, in order that they may be in a state to develop themselves. To attain this, every fruit-shoot is pruned, for the first time, to a length proportionate to its strength, and to the place it occupies; that is to say, as many fruit-buds are left on it as it can support without being exhausted. The cut is made above and near to a pushing-eye, which becomes the terminal. The effect of all pruning being to improve the parts beneath, all the wood-buds and fruit-buds that are allowed to remain, uniformly open. The growth of the young shoots is conducted so as to always encourage that of the lowest one; all those that are useless are pruned off, and we check, by pinching, if they are growing too luxuriantly, those intended to be preserved; and lastly, the shoot which has been selected to become, at the following pruning, the successional one, is maintained in a proper degree of vigor.

Fig. 9.

85. The following year the whole of the former year's fruit-branch is cut off above the shoot encouraged at its base, which now becomes a fruit-branch, bearing fruit in its turn; and is pruned so as to encourage, as before said, the development of one or two shoots at its base, one of which is to become its successional shoot. The same operation is performed year after year. For the better understanding of this see fig. 9. The branch A, at first pruned at *c*, has borne two fruits at *o*, *o*, and has made the shoot seen from *c* to A; at the same time it has produced the shoot B, which has now become a successional fruit-branch; and with this view the branch A is pruned at *d*, immediately above the insertion of the old fruit-branch, and this successional shoot at *o*, above the double eye *i*, which will bear fruit, as well as the two single eyes lower down the shoot, viz., *k*, *l*. At *m* and *n* are seen two wood-eyes, one or other of which, in growing, will supply the successional shoot in the following year.

86. Such is the general principle, the object of which is to concentrate the sap in the lower eyes, and thus prevent them from dying off; for, in that case, we would be obliged to cut off the branch that had fruited, as it only wastes the sap, without having, at the same time, any means of replacing the said branch; and thus a gap would be produced at the place it occupied. Nevertheless, this too absolute principle must receive some modifications which will be adverted to when explaining the rules applicable to each of the four sorts of fruit-branches which exist on the Peach tree.

87. First Sort.—*Fruit-branches with Single Eyes* (fig. 1.) This sort is the worst and especially so when, as frequently happens, there is no wood-eye at its base, from which we might hope to obtain a successional shoot. When this is the case, the generality of good cultivators are of opinion that it should be cut out. I am only of that opinion when it is not required for covering the branch, but when it serves to fill up a blank it should be preserved. It is left entire, because it possesses no wood-buds except the terminal one; and this, by drawing the sap towards it, allows of the setting of two or three fruits, which may be left upon it, taking care to pinch off the superabundant flower-buds. It must be nailed so as to give it as much liberty as possible, in order that it may gain strength; and when its terminal shoot has grown sufficiently to establish the flow of sap, its herbaceous extremity is pinched off with the view of concentrating the sap, and exciting it to seek a fresh outlet. By this means we can sometimes cause a wood-eye to spring from the lower part of such a branch. Should this take place, we have then a successional shoot to which the branch can be cut back at the summer-pruning if its fruits have dropped; or after they have been gathered, if they hold on.



88. If however this eye, of such great importance, be not formed, and it be impossible to suppress the branch without occasioning an ugly blank, it must then be preserved till the next pruning, cutting it back to the wood-bud nearest to the old wood, in order to again try, by checking the flow of sap, to produce a wood-bud still lower. If this were formed it would be needful to cut down on it immediately, if one or two fruits do not make it worth while to retard the operation till after they are gathered. At the same time the young shoot above must be checked by pinching, so that the one

recently sprung from beneath run no risk of being impoverished. This mode of treatment is so much the more important in consequence of this kind of branches existing more especially on the lower parts of the tree, toward which we must lose no opportunity of inducing the flow of sap, which has always a comparatively strong upward tendency.

89. Second Sort.— *Branches with Double Eyes* (fig. 2); *and* Third Sort.— *Branches with Triple Eyes* (fig. 3). These two kinds of branches, which are the most common on Peach trees, are both pruned in the same manner. The branch which has fruited is cut down to the successional shoot; and the latter is pruned on a wood-bud, leaving it long enough to have a sufficient number of flowers. The shortening is made with the view of leaving on each bearing-branch only as many fruits as it can support without weakening itself, and also with that of concentrating the sap so as to favor the development of the buds, or young shoots at or near the base, one of which becomes in turn a successional shoot at the following pruning.

90. In these, as in the preceding sort, it may happen that a fruit-branch, pruned the year before on a single wood-bud, may not have produced others at its base during the time of its growth. It must then be cut back to the wood-bud nearest to where it was pruned before. If a lower eye does push, it must be treated as directed (88).

91. The fruit-branches on the upper side generally become of a greater length than those on the under side, which tends to cause more difficulty in getting buds to push near the base. In this case, after having been pruned sufficiently long to preserve the fruits, they are trained as will be shown at 93. If an eye form at the base of any of them, it is well to encourage its growth by pinching and cutting off, or disbudding, all the young shoots above it, at the summer pruning. Without the precaution of pinching and disbudding, the upper shoots would absorb the sap, and the lowest one would become so impoverished as to be destitute of eyes at its base, and we should then be obliged to replace with a better constituted young shoot, further situated however from the main branch.

92. *The Flower-buds*, on shoots from the upper sides of the branches, are very often found at a considerable distance from the base; and we are consequently obliged to leave the shoots much longer than would otherwise be proper, in order to have fruit. There is no objection to this, only it is advisable to take out the wood-eyes that are beneath the lowest flower-bud, with the exception, it must be well recollected, of at least two of the nearest to the base of the shoot. In this way there is no opposition to the development of the latter, either of which may replace the fruit-branch at the following pruning.

93. I have spoken of a particular mode of nailing a branch without a developed eye at its base so as to make it produce one, that being indispensable for the formation of a replacing shoot. It is done in the following way:— As soon as a fruit-branch of this description is pruned, it is nailed in winter to the wall, bringing it as close as we can, without breaking, to the branch on which it grows. It is well-known that every fruit-branch forms with the branch that bears it an angle more or less open; we must endeavor in this case to render the angle as acute as possible, and the

extraordinary bend imposed on its lower parts, by this mode of nailing, compresses strongly the woody fibres of the base, and stretches the bark on the outside of the curve. The sap attempting to effect a passage through its proper vessels, which are now closely squeezed together, often breaks through the bark and pushes the eye desired. This proceeding is, however, only applicable to branches one or two years old.

94. It is not absolutely necessary to wait till the usual time of pruning to cut back to their successional shoots those branches retained as fruiting-branches at the winter-pruning. There is always an advantage in doing so whenever we can, excepting when the successional is growing too vigorously, notwithstanding our endeavors to check it by close nailing and pinching off. During the summer-pruning, if we have time, we cut of all the branches on which the fruit has not set permanently; and, in general, it is well, after the fall of the leaves, to cut out all the useless wood; this leaves so much less to be done at the regular winter-pruning. By cutting off at this time the greater part of the branches that have borne fruit, we strengthen their successional shoots, and render available for the latter the portion of sap which the parts cut off would have appropriated: and there is always an advantage in not allowing the tree to nourish useless productions. This attention is especially necessary for the weaker branches. Unfortunately, the cultivators and gardeners who have large gardens under their charge are, on account of their many occupations, unable to perform these various operations, which, although useful, are not absolutely indispensable.

95. Fourth Sort.—*Fruit-branches, the Buds of which consist of four or more Flower-buds.* It is called at Montreuil, *cochonnet* or *bouquet de mai* (Figs. 4, 5.) This sort of fruit-branch, or spur, being only one and a quarter to three inches in length, and most frequently forming a cluster (Fig. 5,) with a single pushing eye in the midst, which suffices for drawing nourishment to the fruits, ought not therefore to be shortened. It is preserved, wherever it may be, in order to produce fruit. As it forms almost exclusively on the old wood, we often find it in front of the principal branches; and when thus situated, it must necessarily be cut off after the fruit is gathered. With regard to those on the sides, they are then pruned to the lowest wood-bud; if there be none formed, and that the spur may still be useful, it is pruned to the wood-bud formed on the last summer's shoot pushed by the terminal eye. We must endeavor, as much as possible, to retain one or two flowers beneath this pruning. As soon as the operation is performed, the branch is nailed, as was said at 93; and sometimes a wood-bud, capable of replacing it at the following pruning, is produced at its base. When they have eyes at their bases they are properly constituted, and are pruned as directed at 89.

96. Although I have hitherto, in conformity with the old belief, directed the fruit-branches always to be pruned on a wood-bud which was judged necessary to preserve a good state of vegetation, yet I am now able to affirm that a terminal wood-bud is not absolutely necessary for the growth and maturity of the fruit. Whence it follows, that under certain circumstances, such as the necessity of prolonging a fruit-branch to a great length, in order to obtain a wood-bud, which after all is too high up, I

prune above a flower-bud, without any bad consequences, provided that the base of the branch is sufficiently vigorous.

97. The tree must be completely unnailed before pruning, lest some of the branches be split or broken during the operation. The walls and trellises are inspected, the insects destroyed, and the whole made as clean as possible. The tree must not be unnailed till we are ready to begin pruning; and the principal branches must be trained in, and secured immediately after the operation is completed, lest they suffer from the effects of severe frosts, which often occur at that time of the year.

98. In pruning, I always commence with the fruit-branches, going along the principal branches, beginning with the highest of these and working downwards. This method has the advantage of enabling us to judge better of the strength of the upper fruit-branches, and of rendering it easier to balance them with those that are on the under side and at the bases of the principal branches, the fruit-branches growing there being always less vigorous than those on the upper sides and extremities.

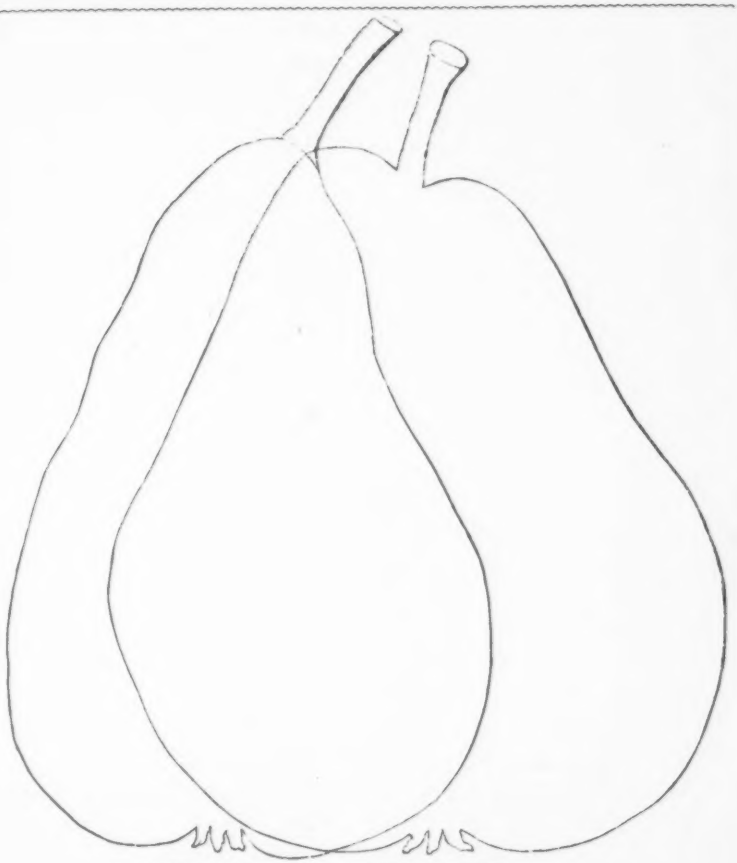
After each fruit-branch has been pruned according to the principles I have laid down, I train in the principal branches of the tree, inclining each in the way it should go, and then only do I prune their extremities. By this mode of proceeding it is easier to judge of their relative length and strength, so as to act accordingly.

A SCORE OF NEW PEARS.

BY HON. M. P. WILDER, PRESIDENT OF THE AMERICAN POMOLOGICAL SOCIETY.

[A YEAR ago we had the pleasure of presenting, from the pen of Col. WILDER, a valuable chapter on "New Pears that promise well." He has again very kindly yielded to our request, and favored us with the following outlines and accurate pomological descriptions of twenty select new, or recently introduced varieties. It is unnecessary for us to say that the information imparted in this paper is of great value to nurserymen, as well as to amateur cultivators, who feel particularly interested in Pear culture, and are making up large collections. Those only who have actual experience, can appreciate the amount of labor and expense involved in conducting such immense experiments as those from which Col. WILDER has gleaned the results now so liberally communicated. We must take this occasion to express the hope that this year will be a busy one among fruit growers, in all parts of the country, in collecting facts for the great Pomological Convention, to be held in Boston next autumn. Of this we shall have more to say hereafter.]—ED.

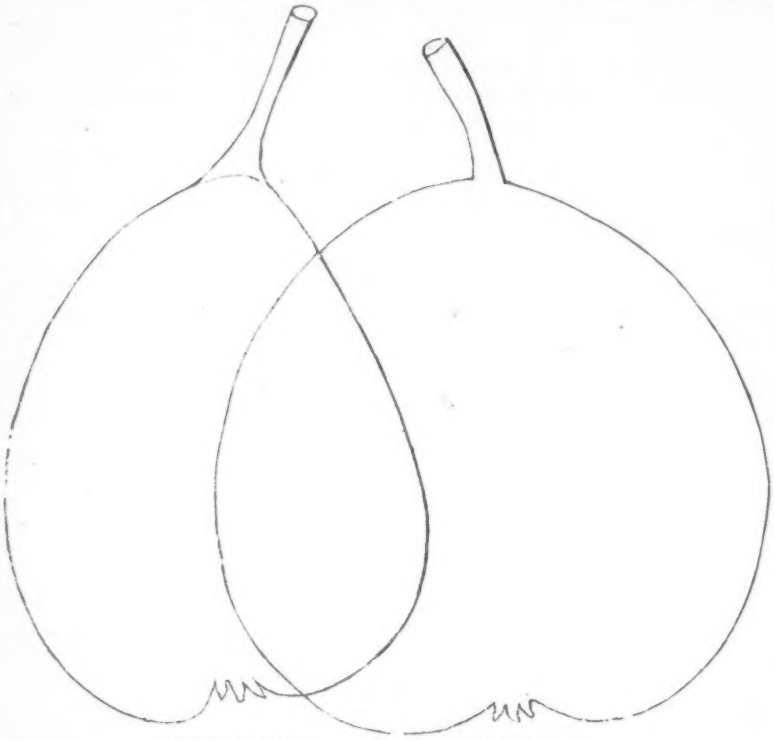
BUERRE NANTAIS.—Size—large. Form—pyriform, slightly contracted in the neck somewhat obtuse. Stem—rather stout, about one inch in length. Color—a clear green until mature, when the skin assumes a pale, handsome yellow, generally without any blush, and with but few traces of russet. Flesh—melting, tender, and juicy. Flavor—sacharine, tolerably rich. Season—September 15th to October 15th. Quality



BEURRE NANTAIS. BEURRE BACHELIER.

"*very good.*" Tree—grows well, on both Pear and Quince; comes early into bearing, and makes a fine, pyramidal tree. Mr. LEROY advertises this as a new variety, but it has long been known in other collections.

BEURRE BACHELIER.—Size—extra large. Form—obovate, obtuse-pyriform. Stem—short, stout, seldom more than three-fourths of an inch in length, planted in a narrow, folded depression. Color—clear green, but at maturity has a handsome, yellow skin; smooth, and with but few traces of russet. Flesh—tolerably melting, and juicy. Flavor—pleasant, inclining to sweet, not high, but agreeable. Season—November to December; keeps well. Quality—"*good;*" and will probably prove, on further trial, "*very good.*" The *Beurre Bachelier* is described as a Pear of the largest class. On the Quince root it is tardy in growth, but succeeds well on its own



ZEPHIRIN GREGOIRE. LOUISE DE PRUSSE.

root, and bears abundantly; a single graft, of one foot in length, having produced, the past season, nine Pears.

ZEPHIRIN GREGOIRE.—Size—medium. Form—acute-pyriform, inclining to turbinate; full in the neck. Calyx—slightly sunk. Stem—one inch, or more, long; set on the apex of the fruit, and frequently surrounded with a fleshy protuberance. Color—dull yellowish-green, slightly marked with russet, and stippled with coarse dots. Flesh—very juicy, melting, and buttery. Flavor—sweet, delicious, with peculiar, rich aroma, not inferior to the *Belle Lucrative*. Season—November. Tree—hardy, and very productive; the fruit being borne in clusters.

LOUISE DE PRUSSE.—Size—medium, or above. Form—roundish-obovate, resembling in appearance the *Belle Lucrative*. Calyx—small, sunk in irregular cavity, tolerably deep. Stem—stout, generally less than an inch in length, inserted without depression. Color—dull green, becoming of a golden hue at maturity; a little obscured with russet spots, and frequently touched with red on the sunny side. Flesh—white, melting, buttery, and juicy. Flavor—rich, subacid, nearly sweet, with an

BEURRE NAVEZ. THEODORE VAN MONS.

agreeable perfume. Season—October to November. Quality—"*very good.*" Tree—upright in growth, forming a fine, bushy pyramid, and succeeds well either on the Pear or Quince.

BEURRE NAVEZ.—Size—large. Form—roundish-turbinate. Stem—About one inch in length, inserted in slight cavity. Calyx—open, set in moderately deep basin. Color—clear green, becoming yellowish when ripe, dappled with russet, and brown on the sunny side. Flesh—melting and buttery, with sufficient juice. Flavor—very rich, subacid, with a fine aroma. Season—October to November. Quality—"*very good,*" superior. Tree—succeeds well on Quince root.

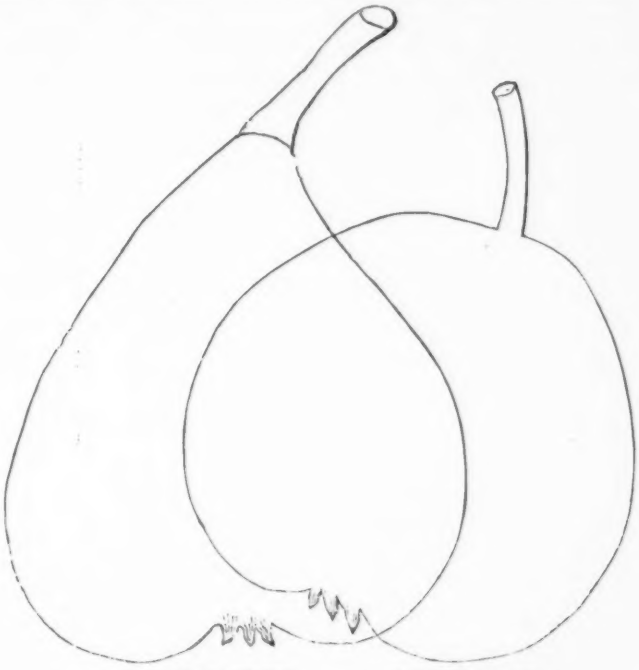
THEODORE VAN MONS.—Size—large. Form—obovate, obtuse-pyriform. Calyx—large, open; segments broad, expanded, set nearly on the apex of the fruit. Stem—about one inch in length, inserted in slight depression. Color—clear green, with traces of russet, becoming a handsome yellow at maturity. Flesh—tender, melting, and juicy. Flavor—pleasant, sweetish, with some aroma. Season—October to November. Quality—"*good;*" probably "*very good.*" Tree—vigorous, soon forming a

LAURE DE GLYMES. FONDANTE DES PRES.

fine pyramid. Produces abundantly on the Pear or Quince stock, and promises to become a hardy, valuable fruit.

Laure de Glymes.—Size—full medium. Form—oval-turbinate, three inches in height by two and a half inches in diameter. Calyx—open, moderately sunk. Stem—short, less than one inch in length, tolerably stout, inserted without depression in a fleshy base. Color—orange-russet, on a dull yellow ground. Skin—handsome. Flesh—white, melting, and tender; not very juicy. Flavor—sweetish, with pleasant aroma. Season—October to November. Quality—"*good;*" hardy and prolific; bearing in clusters; valuable for the orchard. M. Alexander Bivort describes the above variety, in the *Album de Pomologie*, as being of *exquisite* quality. Our specimens would not bear so high a classification. It may, however, prove "*very good.*"

Fondante des Pres.—Size—medium. Form—turbinate, inclining to pyriform; quite broad across the middle. Stem—one inch in length, set obliquely in a narrow-folded cavity, resembling at its junction the *Passe Colmar*, from which it was raised. Color—dull green, becoming, when ripe, clear lemon-yellow, red on the sunny side, coarsely stippled, and slightly spotted with russet. Flesh—white, melting, and juicy. Flavor—sweetish, agreeable, with considerable aroma. Quality—"*very good.*" Season



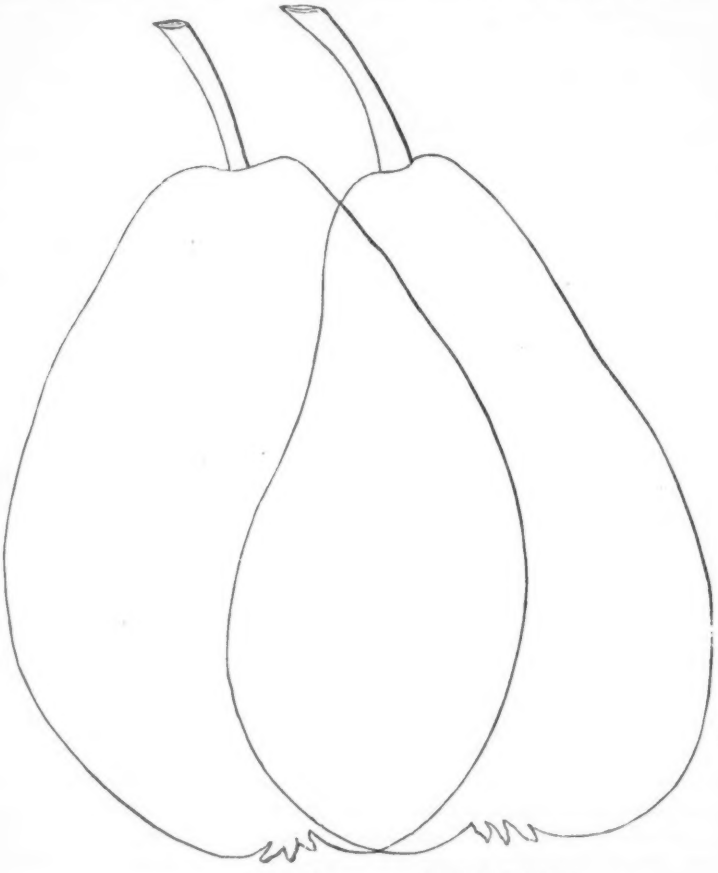
BEURRE SOULANGE. ALEXANDRE LAMBRE.

October to November. This is one of Professor VAN MONS' seedlings. It does not appear to set its fruit so readily on the Pear as on the Quince root.

BEURRE SOULANGE.—Size—medium to large. Form—acute-pyriform. Stem—one inch in length, stout, curved, fleshy at the junction. Color—pale yellow at maturity, with occasional traces of russet. Flesh—melting and very juicy. Flavor—rich, sugary, with peculiarly pleasant aroma. Season—October to November. Quality—"*very good*;" will probably be classed as "*best*." A desirable acquisition; imported from Brussells many years since, and of doubtful nomenclature.

ALEXANDRE LAMBRE.—Size—medium. Form—roundish, *Bergamot* shape. Calyx—moderately sunk in flat basin. Stem—rather stout, less than one inch in length, and generally inserted without depression. Color—yellowish-green, occasionally marbled with red on the sunny side, russeted at the stem and calyx, coarsely stippled. Flesh—greenish-white, very melting and juicy. Flavor—sweet and rich, with *Passe Colmar* aroma. Core—small. Seeds—numerous, plump, and acutely pointed. Season—November to December. Quality—"*very good*," probably "*best*." Tree—prolific and hardy on the Pear stock; not yet proved on the Quince.

DE SORLUS.—Size—large. Form—obtuse-pyriform, inclining to ovate. Stem—

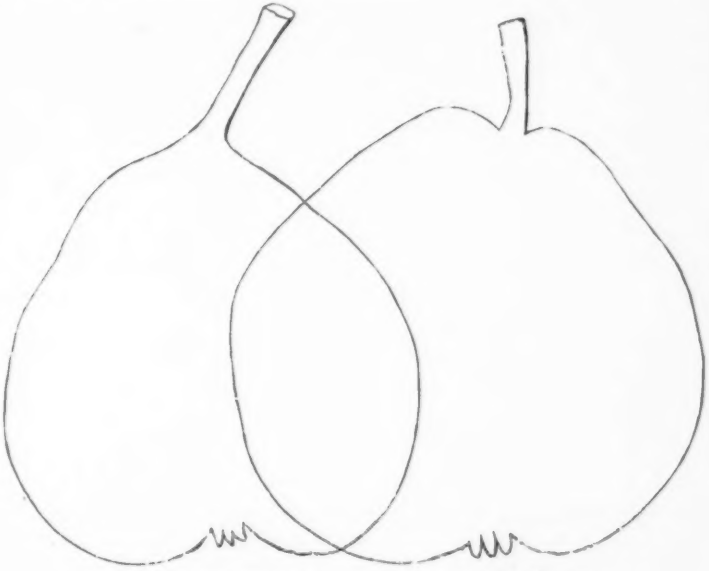


DE SORLUS. COMTE DE FLANDRE.

about one inch in length, planted in a slight depression. Color—light green, becoming yellow at maturity; russeted at the calyx and stem, with some traces on the body. Flesh—white, half-melting, tolerably juicy. Flavor—pleasant, but wants richness and character. Season—November to December. Quality—not yet ascertained; probably "*good*." Tree—of fine pyramidal habit, bearing well both on the Pear and Quince root. M. Bivort describes the *De Sorlus* as of first quality in Belgium.

Comte de Flandre.—Size—large. Form—pyramidal-pyriform, contracted in the neck, and broad at the middle, resembling the *Marie Louise*. Stem—stout, joined to the fruit with fleshy base, one to one and a quarter inches long, set without depression. Calyx—closed, moderately sunk. Color—yellowish-green, becoming quite

yellow at maturity, considerably dappled with russet, and occasionally marbled with red on the sunny side. Flesh—melting and juicy. Flavor—rich, subacid, inclining to sweet, with an agreeable aroma. Quality—"*very good*." Season—November to December. Tree—Vigorous, and very prolific. A seedling of Dr. VAN MONS, which fruited for the first time in 1843, under No. 2,672.



FONDANTE AGREEABLE. MALCONAITRE D'HASPIN.

FONDANTE AGREEABLE.—Size—medium. Form—roundish, obovate. Stem—one inch in length, planted on one side, and fleshy at the junction with the fruit. Calyx—open, in broad, shallow basin. Color—dull yellowish-green, slightly russeted. Flesh—tender, juicy, and melting. Flavor—very pleasant and refreshing, with delicate aroma. Quality—"*very good*," excellent. Season—last of August. Core—large. Seeds—large, plump.

MALCONAITRE D' HASPIN.—Size—large. Form—roundish-obovate. Stem—about one inch in length, inserted in slight depression. Calyx—closed, set in rather deep, irregular basin. Color—yellow, with reddish cheek, russeted at calyx, and stippled with coarse dots. Flesh—melting, juicy, and tender. Flavor—rich subacid, perfumed. Season—October to November. Core—medium size. Seeds—small. Quality—"*very good*." Tree—vigorous, hardy, and productive. A valuable market Pear, received some years since from Paris, but is not now known in the French Catalogues.

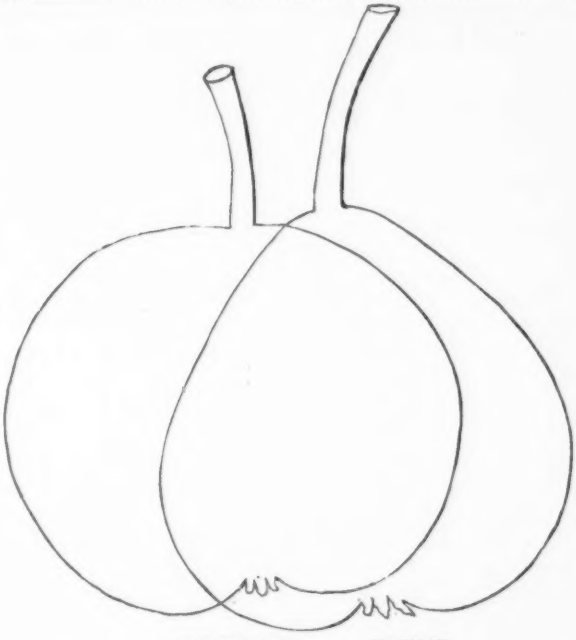
VAN MONS, 1825.—Size—full medium. Form—obovate, obtuse-pyriform. Stem—rather stout, one inch in length, or more, planted in slight cavity. Calyx—closed,

VAN MONS 1825. POIRE D'AVRIL.

rather deeply sunk. Skin—pale yellow at maturity, with a few russet traces, and occasionally a red cheek. Flesh—melting, juicy, and tender. Flavor—pleasant, sub-acid, and rich. Season—October to November. Quality—"*very good*," if not "*best*." Tree—a healthy, good grower; much of the habit of the *Urbaniste*, which it resembles, both in foliage and fruit, but is clearly a distinct sort.

POIRE D' AVRIL.—Size—medium. Form—acute-pyriform, or turbinate. Calyx—closed, set in rather broad basin, moderately sunk. Color—yellowish-green, sometimes with reddened cheek, and a little russeted in spots. Flesh—greenish-white, breaking, and juicy. Flavor—resembling *Easter Beurre*, but much inferior in richness. Season—February to April; keeps well and appears to ripen without difficulty. Core—small. Seeds—long, and pointed. Mr. RIVERS, the English cultivator, classes this variety among the Cooking Pears. Further trial may class it among the late dessert fruits, of medium quality.

DOYENNE ROBIN.—Size—medium. Form—roundish, *Bergamot* shape. Stem—rather long, planted without depression on a flattened surface. Calyx—small, moderately sunk. Color—pale lemon-yellow, russeted at the stem and calyx, and profusely stippled with coarse dots. Flesh—white, fine, melting and juicy. Flavor—sprightly, vinous, with pleasant astringency, like *Doyenne d'Ete*, rich and good. Quality—"*very good*." Core—medium size. Seeds—plump and fair. Season—Oct. 1st.

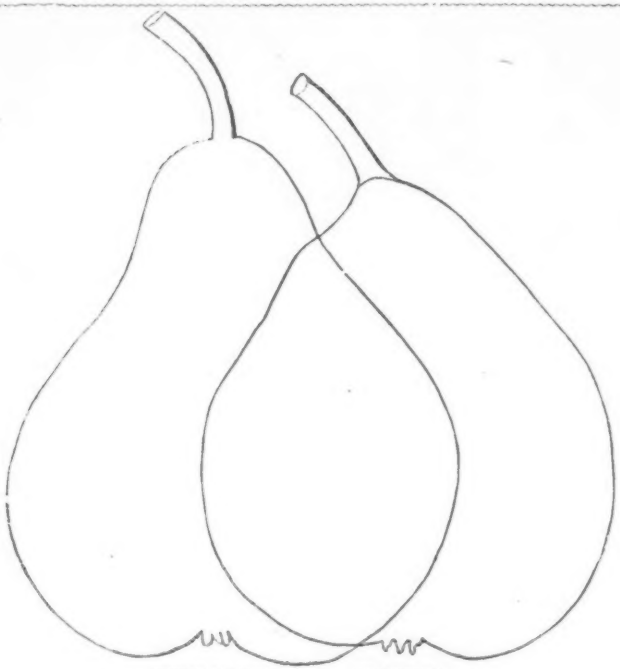


DOYENNE ROBIN. DE BAVAY.

De Bavay.—Size—medium. Form—turbinate. Stem—long; one and a fourth inches, or more, in length; planted without depression. Calyx—large, open. Color—dull yellow, coarsely stippled, and considerably traced with russet. Flesh—juicy, tolerably melting. Flavor—an agreeable subacid, pretty rich. Quality—"*very good.*" Season—October to November.

Millot De Nancy.—Size—medium, or below, Form—pyramidal-pyriform, narrowed in the neck. Stem—one inch in length, inserted without depression in folds, like the *Passe Colmar*, which it resembles. Color—dull yellow, ground overspread with orange-russet. Skin—handsome, sometimes reddened next the sun. Flesh—buttery and melting; not very juicy. Flavor—tolerably rich, sweetish, with peculiar and pleasant aroma. Season—October to November. Quality—"*good;*" promises to be "*very good.*" Tree—vigorous, and succeeds on the Quince. This is No. 2,670 of Dr. Van Mons' collection.

Pocahontas.—Size—medium. Form—variable, obovate-pyriform inclining to ovate. Calix—small, closed, moderately sunk. Stem—short, about three-fourths of an inch long, inserted without depression. Color—lemon-yellow, partially covered with thin traces of russet, particularly at the stem and calyx; occasionally with bright vermilion cheek. Flesh—white, melting, juicy, and buttery. Flavor—sweetish, rich, with pleasant musky aroma. Core—small. Seeds—few, frequently abor-



MILLOT DE NANCY POCAHONTAS.

tive. Season—October 1st to 15th. Quality—"*very good.*" A beautiful variety. Origin.—Quincy, Massachusetts.

P. S.—Among the modern *foreign* varieties, which have fully sustained their reputation, and may now be considered as valuable for general cultivation, are the following:

Beurre d'Anjou.—No Pear, of recent introduction, is destined to take a higher rank. Always fair, large, and delicious.

Beurre Sterkman.—One of the best acquisitions, of late years; and will occupy a place beside the *Urbaniste*, *Flemish Beauty*, and other fine autumn Pears.

Beurre Superfin.—A superior fruit, in every respect; and in flavor and texture equal to the best *Brown Beurre.*

Nouveau Poiteau.—As a thrifty and prolific tree, either on Pear or Quince root, this variety cannot be surpassed; uniformly bearing abundant crops of large, fine fruit.

Fondante de Malines.—This fruit improves every year, upon acquaintance, and, the past season, has been particularly large, handsome, and excellent.

Grand Soliel.—Hardy, very productive, and high flavored. Valuable.

Beurre Clairgeau.—This celebrated variety will produce quite an excitement among fruit growers, on account of its size, productiveness, and beauty. It is a fine grower, and succeeds on both Pear and Quince root.

The following *American* varieties are uniformly hardy, productive, and excellent in quality; all well adapted to orchard cultivation: *Howell*, *Sheldon*, *Dallas*, *Collins*, *Wadleigh*, *Meriam*, *Kingsessing*.

The *Lawrence* will, ere long, be universally esteemed as one of the best winter Pears; invariably rich and delicious, keeping to the present time, without difficulty.

The *Beurre d'Aremberg* still stands, with me, at the head of the list of late sorts; uniformly ripening in perfection, and with little care. On standard trees, with high cultivation, this variety will probably never be surpassed.

In closing this chapter, which has already been extended beyond my original intention, I subjoin a list of a few other sorts, which have come into a bearing state the last year. None of these have borne before, and now only on imported trees; but, from appearances, some of them will probably command especial favor.

Pie ix.—A large pyramidal, or turbinate, high-flavored, buttery Pear; ripe the first of October.

Comte de Paris.—A large, obtuse-pyriform fruit; handsome and prolific. October.

Cornelis.—Large, pyriform; excellent. September.

Willermoz.—Above medium size, handsome and good. Ripe middle of October.

Retour de Rome.—A russet Pear, of good size and excellent quality. November.

Emile d' Heyst.—Large, form of the *Dix;* very melting and juicy. October.

Beurre Berckmans.—Regular pear-form; second size; first order. December.

Monseigneur Affre.—Middle size; a rich, melting Pear. November.

Marquis de Bedmar.—Second size; *Bergamot* shape; fine quality. October.

Madame Eliza.—Large and handsome; a late fruit, of good promise. November

GRAPES AND GRAPE CULTURE.

BY WM. CHORLTON, GARDENER TO J. C. GREEN, NEW BRIGHTON, STATEN ISLAND.

If we were all to take the same course that your correspondent, Mr. Messer, has done, viz., give our experience at the end of each season, through the pages of the *Horticulturist*, there might be collected an amount of information which would be very valuable in a collective form. Taking this view of the subject, allow me to follow in his wake by recording my own progress the last year; and as the cold grapery is his main point, I will confine myself for the present to the same consideration.

The house at this place has not had any artificial heat, and has given satisfaction, notwithstanding the wet summer and the more than usual tendency to mildew. The total number of bunches ripened off were 918. The first ripe, out of a collection of over twenty kinds, were *Muscat Blanc Hatif*, *Malvasia*, and *Royal Chasselas*, and were cut in good condition on the 2d of August. Other sorts were ripe as follows: *White Frontignan*, 10th Aug.; *Gromier du Cantal*, 16th; *Black Frontignan*, 27th; *Austrian Muscat* and *Black Hamburgh*, 10th Sept.; *Muscat of Alexandria*, 12th; and others later, according to habit. The vines were uncovered on the 1st of March,

and from the 19th to 26th May continued to open their blossoms. About the middle of July we had a succession of damp and foggy weather, with the wind prevailing south and southeast, when mildew began to show itself. The house was then dried off; no more water was applied inside, as the weather continued damp and the grapes were ripening. Air was admitted above more abundantly, but with caution, and the floor sprinkled over with sulphur; after which, for three or four days, the heat was allowed to rise to 110° in the middle of the day. What little mildew could be found was cleared off, and not much appeared afterwards. I mention this more particularly as the above pest has the past season been more than usually prolific in this neighborhood, and as I feel further convinced that this is the best method of getting rid of it.

Mr. MESSER says, with respect to his own house, that "if there had been no forcing in the spring, the *Hamburghs*, *Muscats*, and *Frontignans* would have been worthless;" and that in his neighbor's, many clusters of the *Purple Frontignans* decayed prematurely. This has not been the case here; for out of the number above stated there were only some seven or eight bunches which shrivelled, and those were *Muscat Blanc Hatif* and *Royal Chasselas*, the former of which only cracked a few berries the past season, although it is very apt to do so. The last Grapes were cut in good order on the 18th November, viz., *West's St. Peter's*, *Reine de Nice*, *Syrian*, and *Palestine;* and these would have hung longer, but were wanted for use.

This house was planted in March, 1850, and contains 74 vines. In 1851 there were cut 262 bunches; in 1852, 618 bunches; and last year, 918 bunches;—making a total of 1798 bunches. The vines have made healthy, strong, and well-ripened wood, with plump, prominent eyes, for next season, and are, if anything, in better order than heretofore; and this without the aid of "dead carcases," which your correspondent, Mr. MCKAY, is so much in love with.

Facts are stubborn things, 'tis said, and both Mr. MCKAY and Mr. CLEVELAND seem disposed to give this position to the public. Now, it is just possible both have failed to support the principle for which they are contending. I do not think that any man of experience will deny that the latter gentleman's old horse did make a quantity of rich material, and that in this well-rotted state his vine roots did luxuriate therein; and that the former's eighty head of cattle did contribute somewhat toward the rapid growth of his *Isabellas*, by being buried so deep; and that the gaseous matter evolved therefrom distributed itself among the superincumbent stratum, which had been well worked and loosened up, and which it is presumed was something of a "maiden" earth, therefore just in the state to absorb and retain such—like a dog with an empty stomach, it wanted something organic;—and that afterwards, when the whole was thoroughly decayed, the roots were found in abundance among the bones, and what would be black mold, rich in organic ingredients. But how far does either example go to prove the advantage of using these same substances in a fresh state, and in the wholesale quantities, along with or even under other rich material in a vine border, to such an extent as sometimes is done, and until the whole mass is glutted until it is one mass of putrefaction. If we are driven to facts, let us abide by them. Therefore, has Mr. CLEVELAND, with the *carcases* which he used in making his borders, produced

anything extraordinary; or has he even obtained as much, of better quality, in the same time, and with his vines in any better order for futurity, than I have recorded above, and this without any such nuisance. He speaks of the great number of premiums that have been awarded to him; but is it that he has produced something very wonderful from time to time, or is it rather because he has not had much superiority to contend against. In a former article, (*Horticulturist*, 1852, p. 110,) he says that his "vines were not allowed to bear a bunch till the fourth year after planting," and that at the end of eight years he has "never been able to ripen perfectly more than nine or ten bunches on any single vine." Now this does not argue much for the benefit to be derived from such material as he advocates.

With regard to Mr. McKay's example, he jumps at a conclusion rather too fast, without having proved much in favor of the argument. In the first place he has a gravelly bottom — the one above all others most suited to the Grape vine, as admitting of good drainage; his soil is particularly well worked, with some manure added where the roots could take hold of it, which would enable the vines to luxuriate finely for a length of time, until the fleshy part of his *oxen* was all decayed into mold; and as all the lumps only covered a part of the whole area, the superabundant water could drain away, and with his good culture the soil would remain porous; therefore the gases would be taken up by his *fresh base soil*, which would render it more fertile. This is a very different circumstance to what is advocated with respect to vine borders; and when Mr. McKay has seen as much mischief done as I have, by the use of these materials, he will not be so sanguine about fresh carrion. I do not deny the good properties of animal manures, when thoroughly decomposed, and in reasonable quantity, but do protest against gorging the ground with them in a fresh state; for no root can exist in contact with such matter: and as barn-yard manure will answer the same purpose, and is generally much more convenient and cheap, where is the advantage?

With respect to the cultivation of hardy Grapes, there is no doubt but what if the same attention were bestowed on them as there is on the exotic, they would be equal in luxuriance to the latter, and might be made to produce fruit of far better quality than is generally seen; and your correspondent in this instance has only shown what good culture will do: and further, if he will use good barn-yard manure freely, *with the same good tillage* which he has heretofore practiced, I am very much mistaken if, after a "patient trial," he will not then admit that it is not so indispensably requisite to use dead oxen or any other animal flesh.

The presumption respecting the cure of mildew by cutting off the top roots, is so devoid of physiological fact, and so opposed to experience and observation, that I must own my incompetency to understand it. Is it not more likely that the healthiness of his vines wards it off, as there are plenty of examples to prove this probability?

Reviews.

THE AMERICAN HAND-BOOK OF ORNAMENTAL TREES. By THOS. MEEHAN, Gardener. Philadelphia, 1853.

WE always welcome every new contribution to the "literature of trees." It happens more frequently than otherwise, that the planter who becomes the proprietor of a new place knows nothing of the business he undertakes in attempting to lay the foundation of an ornamental lawn or garden. Why this is so, we shall not stop to inquire; but we know that when ninety-nine out of a hundred citizens are placed suddenly in an arboretum, they are unable to distinguish the beautiful, or to classify the objects around them; nor would any of these ninety-nine be qualified to undertake, even with the advice of books, the selection of trees for their own grounds. Unfortunately, it is these very citizens who most frequently become possessed of the means which are an essential part of the process. The determination to plant is followed by the purchase of books. These are read, too, but not understandingly. If a competent gardener is employed to give his advice and assistance, the probabilities will be that he is interfered with. The difficulties inseparable from procuring the variety necessary, and the hurry with which it must be done, with the too late discovery that much more than was expected has been expended on the dwelling and its numerous alterations and added conveniences, deter the cit in pursuit of a *rus in urbe* from doing half he should do in the way of ornamental planting. The result is a miserable failure: handsome furniture, and miserable trees; a showy equipage, and no underdraining; elegant dinner parties, and no variety of out-door objects; a show of plate and china, and not a single plant to satisfy the botanist. Why is this? In the first place, want of knowledge in the proprietor is the greatest drawback; imperfect assistance and advice is the second; the third may be set down as the difficulty of procuring from the near vicinity of the ground to be ornamented that variety which constitutes one of the elements of beauty, —for the beginner may set it down as a fact, that to collect an arboretum is as difficult a feat as to make a cabinet of shells or a museum of birds. At best it must be a work of some time, unless you choose to make a long list and forward it to the proper quarter, knowing that your purse will suffer in shortness in proportion to the length of the order. No one, however, need despair; these observations regarding the difficulties should only stimulate the beginner, who must, if he wants to have the true enjoyment such pursuits afford, give a little time at least to the study of the subject.

What book shall we recommend for this study? We candidly confess we know of no single one that will answer the purpose, though there are many that will aid the learner. Observation of the work done and the beauty accomplished by others, is of the first importance; inquiries, and visits to well-planted places, nurseries and so forth, can not be too frequent, in conjunction with study at home; botanical knowledge is useful—we do not say indispensable; and yet some kind of *love* for the topic must be at the bottom of the whole.

Mr. MEEHAN possesses the requisites for an adviser; and we know of few men to whom we would more freely confide the responsible trust of planting for us. In his book, how-

ever, he has been too brief. As gardener at the Bartram Arboretum, near Philadelphia, he has studied and observed the trees there; and subsequently at the costly greenhouses and gardens of CALEB COPE, Esq., near the same city, he has perfected his knowledge: but we can not but think his pages might have been safely enlarged; or the measurements and histories of the single trees at BARTRAM'S have been sometimes omitted, to include in the volume information of a more varied and useful kind. We should like the substratum he has turned up to be again dug over, manured, and planted thicker with more shrubs of knowledge. In short, he does not tell enough, however true it may be that what he does print is dependable. The "hand-book" should be a thorough guide. When it lands us by rail for a visit of a day to some city in Italy, it should tell us all that is essential to be known, that can be compressed into a small space. The planter is most probably in as great a hurry as the traveler: he has other things to do—his counting-house and correspondence to attend to—like the traveler, who no sooner catches a glimpse of the leaning tower of Pisa than he wants to hurry off to Florence and Rome, and to read in his coach, as he lolls as at his ease, all about what he has seen; and yet not all,—he does not care to know how many sticks or blocks compose the steeple of Strasburg Cathedral, but he does desire to read of its height and ornaments, and the lacework of its astounding stone abutments.

We have said enough to indicate the difficulties attendant on the first study of planting, and have shown that the busy merchant, in possession of more dollars than tree-knowledge, is the person who is to buy and study your "hand-book." And what should an "American hand-book of trees" be? This is a more difficult question; nor should we be able to point out the man now living who could make exactly our *beau ideal* of such a work. It will not be entirely complete, however, till it is published *annually*, with information in it as to where such and such trees are to be bought the ensuing season, in the best health, in quantics, and at the fairest price—which, be it known also, is not always the *lowest*. For instance, in our imaginary *annual* for 1854, we should like it to tell the interesting circumstance, that owing *to a mistake!* the Messrs. PARSONS, of Flushing, Long Island, are actually the lucky possessors of more of the fine evergreens of California and Oregon, than any nurserymen in the world. They ordered seeds to be sent them from those Pacific "greenhouses," and were somewhat surprised, when they came, to find them accompanied by a bill of twelve hundred dollars! Twelve hundred dollars for a box of seeds! The order had been given, the money was paid, and now for the result. They have for sale say thirty thousand thrifty specimens of *Pinus Lambertiana*, the same number of *Pinus insignis*, and numerous other rare and curious trees, from our new possessions on the Pacific, that heretofore we have been obliged to order from abroad. This is one species of information suitable to be imparted in an annual hand-book. The initiated will understand us when we say that every tree has its similar kind of history; some nurseries are overstocked with one or more kinds, and will dispose of these in quantities at a price which would be absorbed by a single specimen or so at a garden which possesses but half a dozen of the kind. And thus it is of Roses, of greenhouse plants, and of shrubs and bulbs. We could point out some who would gladly give away or exchange a few things that they possess in superabundant quantity, which might be greatly esteemed at a little distance. In this predicament will most old nurseries be found, owing to a change of fashion influencing demand, and other causes.

But enough; let us award to Mr. MEEHAN the merit of having fashioned the framework of a good "hand-book" for future enlargement—a task he is probably well qualified to undertake, and will be more so if he will travel a little more, look about him with an

observing eye, and become aware of the beautiful objects in his favorite line of study which exist even within a few miles of his own neighborhood. We give a specimen of the book:

"VIRGILIA. *Lamarck.* Nat. Ord. *Fabaceæ.*—Corolla butterfly-shaped. Fruit a flat, many-seeded legume.

"V. LUTEA. *Michaux.*—Leaves pinnate; leaflets alternate. Yellow Wood. Native of the Western States. Flowers in July.

"A middle-sized round headed tree, which when in flower is particularly ornamental. These are in clusters larger than the locust, though less odoriferous; pendulous, and of a whitish-yellow color. It is late in putting forth in spring, and one of the first to shed its leaves, which turn to a deep orange-yellow in the fall.

"It thrives best in a rich, light loam, in a cool situation, not exposed to the heat and drouth of summer.

"It is propagated by seeds sown as soon as they are ripe, in boxes protected from mice and severe frosts. They will appear in spring. It also succeeds very well budded on the Sophora in July.

"The finest Bartram specimen is fifty feet in height, and four feet in circumference at the base." p. 239.

So far as it goes, this is all true. We should like him to have added, "It is called Yellow Wood from the color of the wood, and not of the flower, which latter few would see possessed of much tinge of this color. It is extremely rare in all nurseries, and bears a higher price than it ought to, or than it will when a little moderate enterprise shall induce a propagator to send for the seeds to the very small district of Tennessee where only it is found in a native state. The seeds of the fine specimens in several parts of Philadelphia county have never been known to perfect themselves. We have succeeded in propagating it from layers, and these will probably make the finest trees. Allied to the Camellia, and the only native tree of America that has 'such a rich family connection to talk about,' added to its very great beauty and long continuance of flowering, no less than its fragrance, we should enforce a dictum already promulgated by others, that it is absolutely indispensable to an ornamental plantation. A very hard winter sometimes kills it to the ground; but it may be depended on, as far north as Philadelphia, to reproduce itself abundantly by stools, and layers may be made from these. The rootlets are small, and will not bear long exposure before replanting. Like the best people, it is melancholy to think that the best trees are the most rare and difficult to procure." Something like this might enliven a "hand-book," and give some desired information. And we should know something additionally practical if it were added, "Orders sent to —— & ——, the present season, will be filled. Price for plants three to five feet high, at PARSONS' nurseries, — cents; at Philadelphia, $1."

Mr. MEEHAN gives from his own observation some very practical and simple rules to be observed by those who would go to work in earnest. We add a specimen or two, as dicta in which we fully concur:

"21. In planting, the immediate object is to get a speedy formation of new roots and fibres. The best time to plant, then, will be when the earth is a few degrees warmer than the atmosphere, and when the elaborated sap is descending and active, and the tree itself less likely to suffer from excessive evaporation. The time is the autumn, at the fall of the leaf."

This he qualifies in regard to some species.

"39. The effect to be produced by trees should be particularly well studied. The object must never be lost sight of. Pleasure, in its broadest sense, is generally a main object. This is always

to be derived from a perception of the beautiful. Unity, harmony, and appropriate fitness, are the essential elements of beauty; to these, then, must the planters' efforts turn.

"50. Thus the planter should be imbued with the principles of beauty. Without them his labors may excite only wonder at their extent, or surprise at their variety; with them, he combines lasting beauty — a source of unvarying pleasure and delight."

We trust the publisher of this volume will find so ready a sale for it, that he and the editor will combine to make it annual; and if assistance from other pens is called in from different parts of our great country, it may be made, what is much wanted, really "a hand-book of American trees."

Some of our readers will recollect with gratitude the information imparted by LOUDON in his *Arboretum*. He took the pains not only to indicate the prices at English nurseries, but instituted a comparison with those of the continent; so that purchasers were not left at the mercy of one neighborhood, and obliged to purchase at several prices whatever by a sudden demand of fashion had become scarce at home. There is just now an uncommonly great demand for ornamental trees; it is a common complaint that nothing can be had but insignificant specimens of many of the most sought-for kinds; in many instances prices have doubled within two years, with no possibility of obtaining anything but two or three years old plants. Nurseries increase in number, but the demand is in advance of the stock. Time is an important ingredient in the advance of trees not enough remembered by purchasers; hence gardeners run off their young trees whenever they can, knowing that buyers flinch from the just advance in price with increase of size. They give you as a reason, that young trees succeed the best. So they do; but if we were now planting, we should give the preference to Norway Firs five years old to those having only two years' growth; and so of many others: but specimens of this and greater age are difficult to procure. Our supposed annual hand-book should go into this matter; and, while it gave directions as to the proper age for transplanting all descriptions of trees, should inform the seeker how and where to procure them. But, *would it pay?* We answer, yes. Let Mr. MEEHAN, or his co-editor, open a correspondence with all the nurserymen in the United States, (visit them would be better,) and they would cheerfully pay their proportion of the increased paper and print, to advertise this species of really intelligible and valuable information. This would be a source of profit to the bookmaker, which would pay for his increased outlay; and, our word for it, fifty copies of the book would sell where one is now disposed of. It would be indispensable not only to every gardener, but to every planter. We trust our suggestion may be acted on. S.—*Philadelphia.*

[We had already prepared a notice of Mr. MEEHAN's "hand-book," but give the preference to that of our correspondent, who is every way competent to set forth its merits and defects. We have only to observe that in the main we are well pleased with it, and believe it will be of great value to persons engaged in planting ornamental trees. It strikes us, however, that some classification of the trees would have enhanced its value. For instance, *evergreen* trees should have formed a separate section, instead of being scattered all through the volume. We think, too, that the page should have been affixed to the names in the English index. If we wish to find English Hawthorn, for example, we refer to the English index, under the letter H, and find "Hawthorn, English — *Cratægus oxycantha;*" we have then to turn to C, in the alphabetical order of the book, and search for *Cratægus oxycantha.* If the English index had read thus, it would have saved time to all who may consult it: "Hawthorn, English — *Cratægus oxycantha*, 108." The reader could at once have turned to page 108. The alphabetical arrangement does not, to our mind, obviate the necessity of

a complete index. We are all in a hurry in this country, and books of reference—*hand*-books, such as this—should be so arranged as to consume as little time as possible in the profitless and unpleasant labor of turning leaves.

About eighty-two genera of trees, and two hundred and seventy species and varieties, are described: nine of Maples, six of Beech, ten of Ash, ten Magnolias, ten Poplars, twenty-two Oaks, twenty Willows, six Elms, eight Lindens, five Spruce, six Fir, fourteen Pines, &c., &c.—Ed.]

Up the River. By F. W. Shelton, Author of Rector of St. Bardolphs, and Salander the Dragon. With Illustrations from Original Designs. New York: Charles Scribner, 1853.

"Man made the City—God made the Country," is an old saying of more truth than we sometimes find in "common sayings;" and yet man has some hand in giving character to the country—he may deform or beautify it. There is beauty in the uncultivated prairie, where the foot of the white man has never trod; the mighty forest, not yet desecrated by the woodman's axe, is beautiful in its majesty. But these are beauties to be enjoyed only for a short season. The most enthusiastic lover of nature would soon grow tired of such delights. The beauty of the prairie and the lonely majesty of the forest will tempt but few to forsake the pleasures of civilized life. The character of the country, then, as a home for man, depends on man himself.

In all parts of our country there is a new and constantly increasing disposition to shun the city and seek the enjoyments of country life. The question arises, what has given our people such a love of rural life? Perhaps our own and other horticultural and the agricultural journals have done as much as any one cause to produce this result. Then the better cultivation of the soil, better and more tasty buildings, improved stock and beautiful gardens and orchards, have increased the attractiveness of the country, and thrown a charm around country life. The log cabin, surrounded with stumps, was bearable; it showed necessity, and adaptation, and gave an earnest of better things in the future. But when this was suffered to go to partial decay, or substituted by an unsightly board house, surrounded with half decayed stumps and tumble-down rail fences, it was a picture by no means attractive to the man of taste.

With this love of Rural Life has sprung up a Rural Literature. We have had Willis' Rural Letters, Up Country Letters, and now Up the River, with many others of a somewhat similar character. We wish these authors knew more of horticulture—that they were familiar with fruits and flowers, and plants and trees—then their writings would be more interesting and profitable. Had the author of this work known more of the beautiful collections of fruits and flowers to be found "up the river," he would not have devoted twenty-five pages to a pair of Shanghae fowls. It is, however, a very interesting book, and many of its descriptions are exceedingly fine. We marked a few passages, but can only find room for a single extract.

"What more refreshing and delightful, especially in early spring, when sated and disgusted with grease and animal diet, than a tumbler full of short-top, scarlet radishes, placed upon your tea-table, to be accompanied with sponge-like bread and grass butter! How fresh, crisp, crackling, sparking, they are, as you take them out of water! How you love to snap them in two like brittle glass, dip the ends in a little salt, and crack them to pieces in your feverish mouth! Such indulgence is a harmless epicurism, which the present state of sumptuary laws does not forbid. I do hope that Radishes may be spared, although I foresee that the days of salad are numbered, because lettuce contains opium, as is well known."

Foreign Notices.

WINTER TREATMENT AND PROPAGATION OF EPACRISES.—These will have now (Oct. 22) completed their growth and formed their flower-buds. See, therefore, that they are in a proper condition for wintering—their pots clean and the drainage complete; for to have drainage perfect is of more consequence during winter than at any other season: if it is imperfect, the water will lodge in the soil, and turn it sour; the young roots will then perish, and the plant will soon show the ill effects of such conditions. This fact can not be too strongly pressed upon the attention of the young cultivator. Should any worm-casts appear on the surface of the soil, means must be taken to get rid of them. If only one or two pots are infested, the most certain remedy is carefully to turn the ball out of the pot, and if the worms are outside, to gently remove them, without disturbing the roots; but if they are embedded in the soil, they will be more difficult to come at. If the ball be gently struck with the hand, they will creep out of their hiding-places, and may then be destroyed. Should these means fail, let the plants become moderately dry, and then give a good watering with lime-water; this will effectually displace them. The green fly sometimes prevails in the early part of winter on the young shoots; these are easily got rid of by smoking with tobacco. The application of water during winter is necessary, but only in very moderate quantities, merely just sufficient to keep the soil somewhat moist, care being taken that the ball is moistened to the center. All the artificial heat that is needed for the Epacris is just enough to keep out frost. If the plants, or part of them, are kept in cold pits, they should be securely covered up every night when frost prevails; in very severe long-continued frost, it may be necessary to keep them covered closely up even during the day. They have been kept so covered up for a week together without injury; but on all favorable occasions uncover them, and give them fresh air to dry up damps, and keep the plants fresh and healthy. Air must also be given plentifully to the green-house, both to keep down the temperature and sweeten the atmosphere. Once or twice during the winter let the surface of the soil be stirred, and all Mosses and Lichens removed as well as weeds. Toward spring, when the flower-buds are beginning to push, a top-dressing of fresh mold will be acceptable and useful.

In order to perpetuate choice varieties already known, the only way is to strike them from cuttings; they are by no means difficult to propagate in this manner, though certainly not so easy as a Geranium or a Chrysanthemum. The necessary materials are, some good sandy peat, some pure white silver-sand, and two or three clear bell-glasses, together with a rather warmer house to place the cutting pots in than the green-house. The best time is when the plants have plenty of young shoots upon them, which generally happens about the end of May. The best cuttings are such as are growing on the side-shoots, because these are not so gross and full of sap as the leading branches. The shoots being in a fit state to take off for cuttings, select some pots of such a size as will allow the bell-glass just to fit within them; fill the lower parts of the pots with broken potsherds for drainage, lay upon the drainage a thin layer of the rougher parts of the peat, then fill up with roughly sifted peat to within an inch of the top, and fill up the remainder with pure silver-sand; give a gentle watering from a very fine-rosed watering-pot to settle the sand; then prepare the cuttings. Take them off about 1½ inch long, trim off the lower leaves carefully with a very sharp knife, without injuring the bark; set the bell-glass upon the sand to make a mark, and within that mark put in the cuttings in neat rows across the pot, keeping each variety to itself. Proceed till the number desired to be multiplied is all planted; then give a second gentle watering, to settle the sand close to the cuttings; let them stand half an hour in the shade, to dry the wet off the leaves; then place the bell-glasses upon them, and set them in a

gentle heat, shading them every day when the sun shines, also let the glasses be wiped dry every morning for a month, and by that time the cuttings will begin to grow. To check them from drawing up weakly, uncover them for an hour or two every morning; and when they are rooted, remove them into a cooler house for three or four weeks, leaving the glasses off in dull weather, and shading them from hot sunshine; by that time they will be fit to pot off. If there is a considerable number, and room is scarce, they may be put into 3-inch pots, four in a pot, and allowed to remain in them till the following spring. When they are potted off out of the cutting-pot, place them in a cold frame close to the glass, and shade till they are fairly established. To cause them to form branches close to the pots, nip off the tops as soon as they begin to grow afresh; and when they have filled the small pots with roots, re-pot them, and afterwards treat them in the same manner as the established plants.—*T. Appleby, in London Gardeners' Chronicle.*

Russelia juncea.—This graceful plant is not half so much grown as it deserves to be, its peculiar habit of growth rendering it an object worthy of a place in any collection; it, however, requires great attention in respect to insects, as the mealy bug increases very rapidly upon it. It will grow well in a mixture of well chopped turfy peat and loam. If grown in richer soil it runs to wood, and there are scarcely any flowers. It may be propagated by cuttings, which are struck with facility in bottom-heat; when they are rooted they should be potted off into small pots, and placed in a moist stove, and kept under a glass during their growth, if the stove is very dry; they should then be shifted, as the pots become filled with roots, until they are put in the pots in which it is intended they should flower. Some persons tie up their plants to stakes, but it is much more healthy and beautiful when left to grow in its natural state. During its growth, any of the coarse shoots which often spring up should be cut out, as they spoil the appearance of the plant. Under this treatment, it will produce its beautiful flowers freely, and form an extremely ornamental plant. The plants are generally greatly exhausted after their flowering season, and do not make such good plants when grown over again as those will that are grown from cuttings. Its flowers last for a long time, but during its growth any straggling flowers that should show themselves should be picked off, as they are liable to weaken it, and injure its regular flowering. —*Gardeners' and Farmers' Journal.*

"Ne Plus Ultra"—a fine Late Broccoli.—Preëminently superior among the new varieties of vegetables which from time to time come before the public, stands this new Broccoli, being by far the best variety of that esteemed vegetable that has yet come under my notice; and possessing as it does all the good qualities which its name implies, I feel I shall be doing the public a service by making its merits more generally known. For the last three years I have grown this sort along with others of known excellence, with the same unvaried result in favor of the "*Ne Plus Ultra*," and during the last year, a season of unparalleled fatality to Broccolies, while others were killed this sort stood uninjured, producing its fine heads in May and June, equal if not superior to other sorts in favorable seasons. The chief merits of this Broccoli consist in its being very hardy, possessing a dwarf habit, with large and compact rich cream-colored heads, which are protected by ample smooth glaucous foliage, and it has the richest flavor in the whole tribe. Need I say more than this, that it possesses all the finest qualities of the far-famed *Penzance* Broccoli, in addition to a hardiness which has long been a desideratum in that otherwise excellent sort. No garden, however small, should be without it.—*H. Mitchell, in London Gard. Chronicle.*

Tree Labels.—I am of opinion that nothing equals thin sheet lead for this purpose; it is very pliable and durable; the letters should be stamped on it, and the labels soldered to small iron stakes, or nailed to the wall, as the case may be. I have seen labels of this kind which had been in use for sixty years, to all appearance as good as they were the day they were made. Putty, paper, or wood, are more fit for the boudoir than to stand the test of the seasons. They want renewing every five or ten years; but this is not the case with lead, which is very lasting.—*W. Brown, in London Gardeners' Chronicle.*

Editor's Table.

Mr. Hovey, under the impression, as it seems to us, that nobody has taken the trouble to read his last volume, gives a summary of its leading articles in the opening number of this year. Among other notable performances, which he takes occasion to rejoice over, are his precious effusions on root-grafting. He says:

"Incidentally, in the early part of our last volume (XIX) we copied some remarks made at the Northwestern Fruit Growers' Convention, in regard to root-grafting, and subsequently gave our views in relation to its practice. These called forth what we suppose was intended as a reply from a contemporary. There was not one single fact brought forward to refute what we said, but only a string of words and wonderful facetiousness, which we allow to pass for what they are worth. Our views of the system remain unchanged; that is, we consider root-grafting as generally practiced—and everybody who knows anything about it knows what that is—an injudicious mode—of *economy* we say nothing—of obtaining good orchard trees."

It seems to us quite superfluous in Mr. Hovey to make this formal announcement that his views "remain unchanged." Nobody who knows him would expect such a thing. To say Mr. Hovey has "changed his views," would be about equal to saying that the leopard had changed his spots.

At the last meeting of the Northwestern Fruit Growers' Association the following resolution was passed:

"*Resolved*, That we are in favor of root-grafting as a principal mode of propagating the Apple."

The Season.—The winter here, up to this time, (January 20,) has been mild. The first snow of any consequence fell about the 21st of December, and for about two weeks after that the weather was moderately cold; the thermometer fell as low as zero only twice. Except in exposed places, where the snow was blown off, the ground was not frozen until about a week ago, when a sudden thaw was followed by a few cold days.

Pears in Ohio.—The Hon. James Mathews, of Coshocton, says: "Among the Pears that I consider the very best, and which fruited with me this year, were *Madelaine*, *Beurré Giffard*, *Ott*, *Doyenné d'Eté*, *Bartlett*, *Urbaniste*, *Heathcote*, *Seckel*, and *Louise Bonne de Jersey*. I think it would be hard to select nine others that would beat these. If I were confined to but one early Pear, it would be the *Beurré Giffard*."

The New York Horticultural Society is holding conversational meetings, we are informed, for the discussion of questions concerning the cultivation of fruits and flowers. Such meetings, if well sustained, would do much good, not only in New York, but in every city and village where a dozen persons are to be found interested in the cultivation of the orchard and the garden. We will be happy to publish reports of the discussions, if some of the officers, or some friend, will furnish them.

STRAWBERRIES.—In the discussion of Strawberries at the Chicago pomological meeting, Dr. WARDER is reported to have said that the variety we figured as *McAvoy's Superior* was *Longworth's Prolific*. We are sorry the Doctor should have taken the trouble to promulgate such an error among our western friends. We know that our drawing is a correct portrait of medium sized specimens of *McAvoy's Superior;* and several of the best informed gentlemen at Cincinnati, including Mr. McAVOY himself, has so pronounced it. This variety is sufficiently distinct from the *Prolific* not to be confounded by any person of ordinary intelligence in such matters. We will here take occasion to assure our readers that we shall never take the trouble to prepare a colored drawing of any fruit until we are perfectly satisfied in regard to its nomenclature, as well as its quality.

THE DELAWARE GRAPE.—Mr. THOMAS J. MYERS, of Dundee, Yates county, N. Y., writes us that there is a Grape in Steuben county, where it has been cultivated for twenty years, that answers our description of the *Delaware* in every respect. He says the vine was owned by a queer old Dutchman, who never would give either a root or cutting of it even to his nearest neighbors; but that at length he has succeeded in getting cuttings, and will propagate it. It appears that the owner of this vine obtained it from a Mr. MAXFIELD, living between Philadelphia and Trenton; and that he brought it from Lisbon, and called it the "Lisbon wine Grape." Mr. MYERS says it is perfectly hardy on the highest, coldest, barren hills of Steuben, and bears abundantly.

THE PEACH TREE BORER.—P. R. FREEOFF, Esq., of Auburn, has handed us a branch of the Peach tree, containing the grub of the Borer. It is seldom this insect is found in the branches, the principal point of its attack being just at the surface of the ground.

OSAGE ORANGE HEDGES.—M. L. SULLIVANT, Esq., the great land proprietor of Columbus, Ohio, has engaged, says the *Ohio Cultivator*, twenty bushels of Osage Orange seed, to hedge his Illinois lands. Success to the enterprise!

WE regret to learn that the plates of a new and valuable work on *Farm Implements*, by JOHN J. THOMAS, were destroyed in the great fire at the HARPERS'.

WE have some half a dozen pages in type, crowded out. This will account for the non-appearance in this number of several interesting articles from correspondents, &c.

HORTICULTURE IN OREGON.—We have during the past month received some very flattering letters from Oregon, and what is more interesting to the publisher, some very long lists of subscribers. About thirty copies are taken at one post office, (Oregon City.) We give a few extracts from these letters:

"The *Horticulturist* is doing a philanthropic work for Oregon, by stimulating a few men to set the example of fruit culture before their fellow citizens, which is truly inspiring. I have no doubt that more attention is being paid to the growing of fruit in Oregon than in any other new territory in the Union. Messrs. LADD and LEWELLING have truly become benefactors, by introducing at an early day, at great expense, and under most disheartening circumstances, so large a variety of the choicest orchard fruits from the States. They have lost many varieties in consequence of a want of sufficient care in putting up the young trees at the nurseries for shipment through a tropical climate. Other whole boxes have been purloined on the Isthmus by treacher-

ous carriers. Yet they have persevered, and succeeded in introducing about seventy varieties of Apples, forty of Pears, fifteen of Peaches, as many of Plums, twenty of Cherries, several of Quince; besides Nectarines, Apricots, Almonds, Currants, Gooseberries, and the Walnut and Hickory nuts. They are doing well in their business.

Several varieties of their Apples, Pears, Peaches, Plums, Cherries, and other fruit, have borne the three last seasons. In general terms, they may be said to promise well, both in the size and quality of fruit. Our trees fruit from one to three years younger here than in the Northern States, and produce more abundantly. No doubt your shy bearers would, with us, load themselves heavily with fruit. This peculiar characteristic of our climate leads us to anticipate that our trees will be short lived, unless they receive a high state of culture. Is this a logical deduction? What peculiar treatment will be necessary to supply trees with nutrition, where they load themselves beyond their capability of support, without breaking?" E. F.—*Oregon City.*

Maintain a vigorous growth by good culture of the soil around the trees, by occasional dressings of compost, and if necessary, thin the fruits. Pruning, also, stimulates the growth of over-fruitful trees. The following is an extract of a letter from J. W. LADD:

"Fruit growing is attracting a lively interest throughout Oregon. The farmers are generally planting out large orchards of the choicest kinds of fruit. We have most of the leading varieties cultivated in the Northern States. In the summer of 1847 Messrs. LEWELLEN & MEEK, from Iowa, brought across the plains most of the leading varieties of fruits cultivated in the West, and now have a large nursery and orchard of bearing trees at Milwaukie, eight miles below this place. Some of their Pears sold at a dollar each, Apples at twenty-five cents, and some, I believe fifty cents. I brought from New York in the fall of 1850 some twenty-three hundred fruit trees, embracing most of the leading varieties cultivated there. These were, I believe, the first trees ever brought to this coast by the Isthmus that lived. Fruit trees make an astonishing growth here, and bear early, and the fairest fruit that I ever beheld. Some fifteen different kinds have borne fruit this year, on small trees only one year from the bud.

Our climate seems peculiarly favorable to the growth of trees. I have not seen ice thicker than window glass this year. We have had only three hard frosts; just enough to stop the growth of trees. All kinds of hardy grass is yet growing finely, so that the loose stock are fat without being fed. J. W. L.—*Oregon City, Dec. 10th.*"

FRAUD IN FRUIT TREES.—The trade in trees has now grown to be so extensive, that a large number of persons are attracted to it who are mere dealers, buyers, and sellers. Many of these are honest, responsible men, who aim at doing a fair, honest business; but on the other hand, many of them are notoriously dishonest, and are perpetrating gross frauds upon the community. By deceitful means they procure the catalogues of respectable concerns, and represent themselves as agents authorized to solicit orders. They obtain their orders, and then fill them with whatever trash they can buy cheapest. People everywhere should be on their guard. We copy the following sensible article on this subject from a late issue of *Moore's Rural New Yorker:*

"In a late number of the *Rural*, we find an article quoted from the *Worcester* (Mass.) *Spy*, under the heading, 'Fraud in Fruit Trees;' upon which, together with the editorial comments, I wish to make a few remarks. Such frauds as here spoken of, have been extensively practiced in this part of the State, the sellers invariably representing themselves as agents of the 'Rochester Nursery.' The purchasers, in most cases, appear to think there is but one nursery in Rochester, and do not even know the name of the person with whom they contracted. Of course, nobody is accountable, and no person's reputation has suffered by the transaction. A single example will show how this business is done up here. A neighbor engaged a few trees, and among them was

a *Black Tartarian* Cherry. The trees, labelled according to contract, were delivered and paid for, and our neighbor, not being very observing, did not discover, until the agent was gone, that the tree for which he had paid fifty cents, supposing it to be a *Black Tartarian* Cherry, was an Apple tree. It may be readily inferred that the 'Rochester Nursery' is not very popular, and yet I find no evidence that one of these trees ever came from Rochester. But be that as it may, I am confident that no nurseryman would hazard his reputation by sending abroad such trees on contracts as are brought in here, unless at the same time, he could hide himself behind some irresponsible agent.

"But what shall we say of the peculiarities of that 'tree manufactory located in an obscure part of New York State,' referred to by the *Worcester Spy*? Can we stretch our credulity enough to believe that trees can be root-grafted in winter, and grow like suckers for two years and then be large enough to 'cheat greenies?' Surely nothing of the kind was ever before thought of in Massachusetts, or the writer would not have traveled to 'an obscure part of New York State' for an example! With regard to these agents, I give it merely as a matter of opinion, and would like to be corrected if wrong, that the Rochester nurserymen have no agents abroad for whose transactions they hold themselves responsible.

"Now, if we do not wish to be 'gulled by this regular wooden nutmeg operation, nor to be verdant enough to purchase of pedlars,' how shall we obtain our fruit trees? We should obtain them at nurseries, conducted by men of good standing and reputation, on whom we can rely. However satisfactory this answer may be, it is, I think, still liable to some objections. If nurserymen did not sell to dealers and agents at wholesale, but confined themselves to furnishing directly those who purchase for their own setting, is it not plain that the large nurseries of the cities, which now send out thousands of choice fruit trees, would be diminished to rods instead of acres? If no trees were transplanted except by those who would go to the nurseries and obtain them, there would not be one fruit tree set, where there are now twenty; and in many locations, at a distance from nurseries, our choicest fruits would remain long unknown. Another difficulty: a farmer comes to the nursery in the spring and wishes to obtain some fruit trees, but he is ignorant of varieties, and yet does not wish to trust the judgment of the nurserymen, but expects a verbal description of the different fruits to aid him in selecting.

"Now, during the season of transplanting, the busiest of all busy men are nurserymen; and arrangements should be made to encroach as little as possible upon their time at this season. Every man that owns an acre of land, should own a copy of the works of Downing, Thomas, or Barry; he can then judge for himself in reference to varieties.

"I concluded there is but one safe way of purchasing trees; and that is, to deal with those who are responsible, and have a reputation at stake; and whenever this can be done, it matters not whether a man buys at the nursery, or at his own fireside, he will be safe in either case.—*A. M. Williams, Marcellus, N. Y.*"

Books and Pamphlets Received.—We have only space at this time to acknowledge the receipt of the following:

Transactions of the New York State Agricultural Society, for 1852.

Transactions of the Northwestern Fruit Growers' Association, for 1853.

Twenty-Third Annual Report of the New Haven Horticultural Society, for 1853, with an address by Rev. W. Clift.

Transactions of the Worcester County Horticultural Society, for the years 1852 and '53, containing the annual reports of committees, with lists of premiums awarded, the officers of the Society for 1853, and a list of its members.

From F. G. Cary, Superintendent of Buildings and Grounds, a circular embracing a brief history of Pleasant Hill Academy and Farmers' College, at College Hill, Hamilton county, Ohio, together with a plan and course of study of a department for the promotion of scientific agriculture and Horticulture; also, a catalogue of the officers and students for the college year 1852–'53.

Kitchen Garden.

THE FARMERS' NEGLECT OF THE KITCHEN GARDEN.—The reluctance shown by this class of people to give a little time and labor to the production of Vegetables for the use of their families, is most surprising. They appear to think the employment altogether beneath their attention. It may be all very well for the women to engage in it, but to suppose that the farmer himself would do so is deemed almost absurd. Ask a farmer why he does not set off a piece of his land as a Kitchen Garden wherein to raise a plentiful supply of agreeable and wholesome vegetables, and in nine cases out of ten he will reply, "Oh, I have not the time, and cannot afford the labor." Now this is altogether a misapprehension. For what purpose has he time at all, but to support comfortably himself and those dependent upon him? (higher aims always supposed.) If, therefore, the products of the kitchen garden will (and who doubts?) most materially add to the comfort and health of a family, and at a far lower cost than the yield of a field, to grudge a little time and trouble is surely inconsiderate if not unreasonable.

Very long is the list of choice edibles; a small lot of ground so devoted will afford Asparagus, Sea Kale, Cress, Lettuce, Peas, Beans, Squash, Onions, Cabbages, Cauliflowers, Carrots, Salsify, Parsnips, Beets, and Tomatoes, besides many useful herbs. A few days' labor in the year would suffice to give an abundance of these things. Probably there is no one who could raise them to greater advantage than the farmer. In most cases he can choose a suitable soil, and he never need lack manure. Indeed, he ought to have these rich gifts of nature in their highest condition. No one can doubt but that vegetables would contribute to the health and enjoyment of the farmer and his household. Through the greater part of the year he eats salt pork, which is apt to engender scrofula and kindred diseases. It is owing to this extreme use of salt provisions, without the counter tendency of vegetables, that such diseases are so prevalent. If he must feed so much upon salt meat, he ought to provide that which would prevent its injurious effects. I find that such people have no reluctance to eat of them when presented, but do so apparently with as great relish as others, while they neglect their cultivation. The expense of growing vegetables is small. Let us take Asparagus as an example. The bed once made will last a life-time, and two or three dollars will obtain a sufficient stock of plants from any nurseryman.

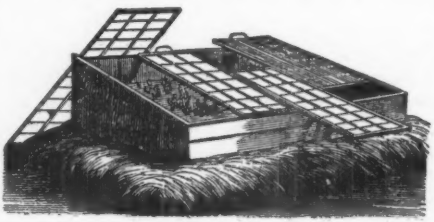
If these things contribute to the health of a family, so they do to its enjoyment. How much they cheapen the cost of living, they know best who are careful and industrious enough to grow them.—CLERICUS.

The above, from a friend in Canada West, is entitled to careful consideration; for no one can be truly said to LIVE who has not a GARDEN. None but those who have enjoyed it can appreciate the satisfaction—the luxury—of sitting down to a table spread with the fruit of one's own planting and culture. A bunch of Radishes—a few heads of Lettuce—taken from the garden of a summer's morning for breakfast—or a mess of green Peas or Sweet Corn—is a very different affair from the same articles brought in large quantities from market in a withering condition, to be put away in the cellar for use. And a plate of Strawberries or Raspberries lose none of their peculiar flavor by passing directly from the *border* to the *cream*, without being jolted about in baskets until they have lost all form and comeliness. And yet, how many farmers, with land enough lying waste to furnish them with all these luxuries—and how many more in the smaller cities and villages, possessing every facility for a good garden—either through ignorance or indolence are deprived of this source of comfort. These things ought not so to be. Those who have never tried it will be surprised to find how rich is the return for labor bestowed. But we would not advise the attempt to do too much. A correspondent writes that he "tried his hand at a vegetable garden last year, for the first time, and planted everything he had seen recommended,

of which he could procure seed." The result was unsatisfactory, as might have been expected. It is not well to attempt too much at first, A few articles well cultivated afford pleasure; a large collection poorly cared for is a source of annoyance.

The present month is the time to get things in order, and as the first work is the making of *Hot-beds*, sash, frames, &c., should be made ready. A new subscriber, a young friend in Ohio, requests us to give simple directions for making a hot-bed, "*just for family use*, unless we consider it a matter so well understood that the room it occupied would be wasted to most of our readers." The many questions we have asked by hundreds of new subscribers, shows us that many are turning their attention to gardening who never gave the subject a thought before, and that the simplest directions in the most ordinary practice are eagerly sought for, and really needed. We therefore comply with the request of our correspondent, giving the system we usually practice, and have before recommended.

Every one should have a hot-bed, if it were only to forward a few plants for the garden. The too prevalent opinion is, that they are expensive and difficult to manage, requiring the skill of the professional gardener. Both suppositions are entirely erroneous. A hot-bed may be constructed by any man of ordinary ingenuity. A frame of about 12 feet long and 6 wide, which will allow of 4 sashes, each 3 feet wide, will be found large enough for any family. It should be made of common two-inch plank—the back about 3 feet high, the front about half that, the ends having a regular slope from back to front. This will give an angle sufficient to throw off rain, and give the full benefit of external heat and light to the plants within. If the beds are narrower, the front must be higher in proportion. The sides and ends are simply nailed to a strong post, four inches square, placed in each corner. For the sash to rest and slide upon, a strip six inches wide is placed upon the frame, the ends morticed or sunk in the sides of the frame, so as not to cause a projection. The sashes are made in the ordinary way, but without cross bars; and in glazing, the lights are made to overlap an eighth or quarter of an inch, to exclude rain. Such a frame, costing but a mere trifle beyond the labor, will last for years, and furnish all the Cabbage, Tomato, Celery, Cauliflowet, Pepper, Melon, and Cucumber plants needed, with a sprinkling of early Radishes, &c. Where so large a frame may not be wanted, an old window may be used for sash, and all expense of glazing avoided. The annexed figure will convey an idea to those unaquainted with it. One of the sashes is moved down as in admitting air, and another laid off entirely.



Hot-beds should occupy a dry situation, where they will not be affected by the lodgment of water during rains or thaws. They should be exposed to the east and south, and be protected by fences or buildings from the north and northwest.

Where it is intended to merely grow plants for transplanting to the garden, they may be sunk in the ground to the depth of eighteen inches, and in such a case require not more than two feet of manure; but when forcing and perfecting vegetables is designed, a permanent heat must be kept up, and the bed must be made on the surface, so that fresh and warm manure may be added when necessary. A depth of three to four feet of manure will in such cases be wanted.

Manure for hot-beds requires some preparation. It should be fresh stable manure, placed

in a heap, and turned and mixed several times, promoting a regular fermentation. It is thus made to retain its heat a long time; otherwise it would burn and dry up, and become useless.

The mold should be laid on as soon as the bed is settled, and has a lively regular-tempered heat. Lay the earth evenly over the dung about six inches deep. Radishes and Lettuce require about a foot of earth. After it has lain a few days it will be fit to receive the seed, unless the mold has turned to a whitish color, or has a rank smell, in which case add some fresh earth for the hills, at the same time holes should be made by running down stakes, to give the steam an opportunity to escape.

Those who wish to force Cucumbers, &c., should begin, in this section, if the weather is favorable, by the 1st of March. For raising plants, the middle is time enough.

Cabbages.—It may not be generally known that Cabbages readily grow and are easily propagated by slips. A stump may be put out in the spring, and the sprouts as they vegetate cut off, the cut allowed to dry, and then planted. When Cabbage or Cauliflower throw off side shoots they may be used in the same way. Cabbage thus raised have short stalks, and are sure of being *true* to the parent. I have often pursued this method when short of seed. C. E.—*Sandwich, C. W.*

Answers to Correspondents.

(R. B. W., Picton, C. W.) Injury from the Morning Sun.—The rays of the morning sun falling directly on frozen foliage or flowers, are injurious; and in localities where late spring frosts occur, it will be well to take measures to ward them off. Trees will do this better than a board fence.

Magnolias.—The *acuminata*, or "cucumber tree," is as hardy as your fruit trees. The *purpurea* or Chinese purple, we think will also stand your climate.

"Egyptian Locust."—We know of no tree bearing this name.

(D. W., Wellington Square.) Upright Quince.—We do not consider it a good stock for the pear. It may do for a few *very* strong growers.

Will you oblige me by answering the following inquiry, in the *Horticulturist*, if convenient. My house stands on a mound, eighty rods from the public road. The drive is laid out winding, and is planted to the foot of the mound, some twenty-five rods, with standard Cherry and Pear trees. Of the following trees, which would you plant the balance of the drive with? 1. Norway Fir. 2. Norway Fir, alternated with Cherry. 3. Norway Fir, alternated with Mountain Ash. 4. White Pine. 5. Sugar Maple. 6. Silver-leaved Maple. S. E.—*La Moille.*

As your avenue is already planted in part with deciduous trees we would advise you to complete it with them; and we prefer the Sugar and Silver Maple—either one, or both; the latter, if you prefer very rapid growth. If you plant evergreens, choose the Norway, and plant not less than twenty or thirty feet back from the walk. We must suggest, however, that a regular row of trees on each side of a winding drive is not consistent. It would be if the drive was straight.

What is a person to do who lives among the hills, where the ground is liable to wash, and who wishes to plant an orchard? If trees are planted among the Blue grass, which kind Providence causes to spring up spontaneously, in order to hold the soil together, they do not thrive well; and if they are worked like corn, as they ought to be, the soil is carried away by every heavy rain that falls. Can any system of subsoiling or draining, or both, prevent this washing process, so that the trees can receive proper cultivation? B.—*Perry Co., O.*

We fully appreciate your difficulties; and we hope some of the readers of the *Horticulturist* who have been compelled to exercise their ingenuity under similar circumstances, may be able to

suggest a better method than we can. We know of no other way than to prepare a nearly *level* bed, of ample dimensions, for each tree; and keep the remainder of the ground in grass. We have seen this practiced advantageously.

In the *People's Journal* of New York, of November, 1853, I saw an account of a *Houghton's Seedling* Gooseberry, surpassing all others in many respects. What is your opinion of it? Is it like G. Newland's *Mammoth Alpine* Strawberries? T. Thornily.—*Fallston, Pa.*

We think very highly of *Houghton's Seedling* Gooseberry. It is much inferior in size, beauty, and flavor, to the large English varieties, such as *Crown Bob, Warrington, Whitesmith,* &c.; but then it is more at home in our climate. It grows freely, propagates easily, bears most abundantly, and the fruit is comparatively, though not wholly, exempt from mildew. The fruit answers every purpose, when it is used in the green state, about as well as any. It should be at least one among every collection.

Permit me to ask of you, through your Journal, some information on setting Apple orchards—the distance apart most advisable. Our nurserymen differ very much on the subject—varying from two rods to four. Please favor us with a little more light. K.—*Rock Co., Wis.*

For a permanent arrangement, forty feet will not be too much in rich, deep soil, where the Apple tree is likely to attain its greatest dimensions. In light soils, thirty feet will be sufficient. An economical arrangement is to place the trees twenty feet apart, and after they have borne a number of years, and begin to encroach upon each other, remove half of them. In this way you obtain the greatest advantage from the ground occupied and the labor expended upon it. The preparation of the ground costs as much for fifty trees as for a hundred, and the first cost of the tree is a small consideration.

Horticultural Societies.

New York State Agricultural Society.—The Annual Meeting of this Society will be held on the second Wednesday of February. The Winter Exhibition of Fat Cattle, Sheep, Poultry, Fruit, Grain, &c., on Tuesday the 7th, Wednesday 8th, and Thursday, 9th February, at Albany. Address at the Capitol by Prof. E. Carr, Albany University, on Wednesday Evening, February 8th, and by the President, Lewis G. Morris, on Thursday evening.

United States Agricultural Society.—The Second Annual Meeting of the United States Agricultural Society, will be held at Washington, D. C., on Wednesday, February 22d, 1854.

Adrian Horticultural Society, (Mich.)—The Annual Meeting of this Society was held on the evening of the 5th of January. This Society, we learn, is in a flourishing condition. The following were the officers elected for the present year:

D. K. UNDERWOOD, President; L. G. Berry, Vice President; F. C. Beaman, Secretary; S. Lathrop, Treasurer; B. F. Strong, Librarian; W. H. Scott, B. F. Strong, B. W. Steer, J. W. Helme, W. H. Waldby, Executive Committee.

Stealing Fruit, &c.—At a late meeting of the Allegheny County Agricultural Society a Committee was appointed to correspond with other similar societies, soliciting their coöperation in an effort to procure, at the present session of the Pennsylvania Legislature, an act declaring the stealing of growing fruit, vegetables, grain, &c., larceny. We shall publish their Circular in our next. Robert M'Knight, of Pittsburgh, is chairman of the committee.

LILIUM LANCIFOLIUM SPECIOSUM.

Engraved on Wood by J. W. Orr, expressely for the Horticulturist.

BELMONT.

Erected in 1850, by L. S. Hasbrouck, Esq., opposite Belleville, N. J. Now the residence of Dr. J. V. D. Berrien.

A. J. DAVIS, ARCHITECT.